CCD-V700E
RMT-501

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

Remote commander RMT-501 is available as a unit, but as indivdual parts the battery case lid of commander is only available.

videoHi8 Handycam

U MECHANISM

- **As for the block diagram, adjustments is issued separately.**

SPECIFICATIONS

System

Video recording system	Rotary two heads Helical scanning FM system
Audio recording system	Rotary head, FM system (2 channels)
Video signal	PAL colour, CCIR standards
Usable cassette	8 mm video format cassettes
Tape speeds	SP mode: Approx. 20.051 mm/sec. LP mode: Approx. 10.058 mm/sec.
Recording time	SP mode: 1.5 hours (E5/P5 – 90) LP mode: 3 hours (E5/P5 – 90)
Playback time	SP mode: 1.5 hours (E5/P5 – 90) LP mode: 3 hours (E5/P5 – 90)
Fastforward/rewind time	Approx. 7 min. (E5/P5 – 90)
Image device	CCD (Charge Coupled Device)
Viewfinder	Electronic viewfinder (Black and white)
Lens	Combined 8 × power zoom lens f = 8.5 to 68 mm, F1.4 with macro Filter diameter 46 mm
Auto focus system	TTL
Colour temperature	Auto, one push white balance, ☼ 3,200 K ☀ 5,800 K
Minimum illumination	3 lux (F1.4)
Illumination range	3 lux to 100,000 lux (0.3 to 9,294 footcandles)
Recommended illumination	More than 100 lux (9.3 footcandles)
Shutter speed control	1/50 to 1/10000 (28 steps)
Aperture control	Auto/manual (16 steps)
Gain control	Auto/manual (8 steps)

Input and output connectors

Video input/output (input → E, Australian Model only)	Phono jack, 1 Vp-p, 75 ohms unbalanced, sync negative
S Video input/output (input → E, Australian Model only)	4-pin mini-DIN Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance signal: 0.286 Vp-p 75 ohms, unbalanced
Audio input (E, Australian Model only)	Phono jacks (2: stereo L and R), –7.5 dBs Input impedance more than 47 kilohms
Audio output	Phono jacks (2: stereo L and R), –7.5 dBs at 47 kilohms input impedance Impedance less than 1 kilohm
RFU DC OUT	Special mini jack, 5 V DC

— continued on next page —

For MECHANICAL ADJUSTMENTS, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL III (U MECHANISM)" (9-972-732-11)

MICROFILM

Hi8 VIDEO CAMERA RECORDER

SONY®

Headphones jack	Stereo mini jack, 8-ohm impedance
REMOTE ◐ jack	Stereo mini-mini jack
Microphone jack	External stereo microphone jack: stereo mini jack, −66 dBs low impedance with 2.5 to 3 V DC, output impedance 6.8 kilohms
Microphone power output jack	Special mini jack, 5 V DC

General

Power requirements	On battery mounting surface 6.0 V (battery pack), 7.5 V (AC power adaptor), 9.0 V (alkaline batteries)
Power consumption	6.9 W (camera recording, including the viewfinder)
Installation	Vertically, horizontally
Operating temperature	0° C to 40° C
Storage temperature	−20° C to 60° C
Dimensions	Approx. 105 × 137 × 341 mm (w/h/d)
Weight	Approx. 1.2 kg excluding the battery and the cassette
Microphone	Electret condensor microphone Uni-directional, stereo type

Design and specifications subject to change without notice.

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SECTION 1
GENERAL

This section is extracted from instraction of manual (AEP, UK MODEL).

Introduction

Overview of the CCD-V700E

The CCD-V700E Video Hi8 handycam is a compact colour video camera/recorder (camcorder). You can use it to shoot the pictures you want and play them back on your television set. It is equipped with a stereo recording system which offers high quality sound to match the Hi8 picture. The full featured camera section offers various camera adjustments to create just the kind of programme you wish.

Who this Manual is for

This manual is designed for you. You can use this manual to find exactly the information you need, whether you are familiar with video equipment or not.

How this Manual is Organized

This manual consists of seven sections.
Section 1 explains the preliminary steps necessary to prepare for shooting and playback.
Section 2 explains the very basic techniques of shooting.
Section 3 explains how to playback the tape being shot in section 2.
Section 4 explains additional shooting techniques which will add flavor to your programs.
Section 5 explains the unique shooting techniques including the programmed AE mode and the manual mode.
Section 6 explains the techniques on how-to-edit your video programs.
Section 7 explains other useful information to enjoy the best of your camcorder.

If you have any problem during operation, see the "Trouble Checks" section.

If you are beginner, start with "Recording a picture using automatic adjustments." If you are very familiar with camcorder operation, also refer to "Operating the Camera Section (2) and (3)" for advanced shooting techniques.

How this Manual Works

Refer to the information below to help you follow the instructions in this manual.

- Controls and settings on the camcorder are shown in capital letters:
  ex. Set the POWER switch to CAMERA.
- The letter in an illustration corresponds to the letter in the text:
  ex. (A-1) or (B)
- The step numbers in an illustration correspond to the step numbers in the text.
- Notes and cautions are enclosed with lines.
  ex.

Note on batteries
Battery will not last as long in cold places.

Supplied Accessories

The camcorder is packed together with the following units. Check to see that everything is contained in the package.

- Wireless Remote Commander RMT-501 (1)
- R6 (size AA) batteries for the Wireless Remote Commander (2)
- Battery pack NP-66H (1)
- AC power adaptor AC-V35 (1)
- Lithium battery CR2025 (1)
- RFU adaptor RFU-90E (1), or RFU-89EA (1) With the RFU-89EA, an aerial selector and a screwdriver are supplied.
- A/V connecting cable (3 phono to 3 phono) (1)
- Video cable with S video connectors (4-pin mini DIN to 4-pin mini DIN) (1)
- Cassette tape (1)
- Shoulder strap (1)
- Jack covers* (1 set)
- Lens cap*

Item with an asterisk (*) is attached to the unit.

Technical Information

Hi8 (High Eight) Video System

The 8 mm video system employs a metal powder tape. This means the video camera recorder is capable of recording a large amount of information and enhances picture quality. Taking advantage of the 8 mm video system, the Hi8 video system has been developed. The main characteristics of the Hi8 video system are as follows:

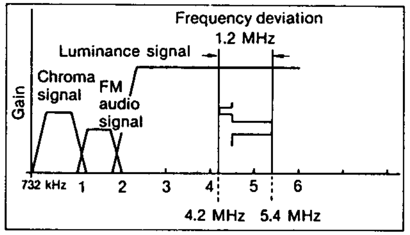
Super High Quality Picture

(A-1), (A-2)

The information capacity is a key element for picture improvement. It can be increased by shifting up the FM carrier frequency range. In the Hi8 video system, the FM carrier frequency range of the luminance signal is shifted up to 5.7–7.7 MHz. This is higher than the 4.2–5.4 MHz range of the standard 8 mm video system. Thanks to this, the horizontal resolution is improved to more than 400 lines.

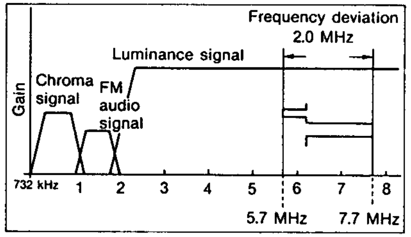
(A-1)

Frequency allocation of the standard 8 mm video system



(A-2)

Frequency allocation of the Hi8 video system



Use of High Grade Tape to Match the Hi8 Video System

Metal evaporated tape is ideal for video systems because it has large magnetic energy that allows for high-density recording. The Hi8 video camera recorder uses such high-grade tape for the Hi8 video system, covering a wide frequency range, to achieve a high-quality video signal for recording/playback.

S VIDEO (Separate Luminance/ Chrominance Signal) Input/Output Connectors

Conventionally, video equipment exchanges the composite video signal containing the luminance (Y) signal and the chrominance (C) signal mixed. The composite video signal is liable to produce interference resulting in picture quality loss. On the contrary, an S VIDEO connector transmits or receives the video signal separated into the luminance signal and the chroma signal. Flickers and color blur in the picture are minimized with the separated video signal, and sharpness is enhanced to such an extent that hair and fine stripes are clearly visible. The S VIDEO connector also assures an excellent editing quality with minimum picture quality loss.

Compatibility with Conventional Video Camera Recorders

A high-quality picture can be recorded and played back on a tape for the Hi8 video system.

Recording with this unit

Hi8 tape

MODE SET menu " Hi8 " to "AUTO" → Tape recorded in the Hi8 video system

MODE SET menu " Hi8 " to "OFF" → Tape recorded in the standard 8 mm video system

Standard 8 mm tape

Regardless of the " Hi8 " setting in the MODE SET menu → Tape recorded in the standard 8 mm video system

Playback with this unit

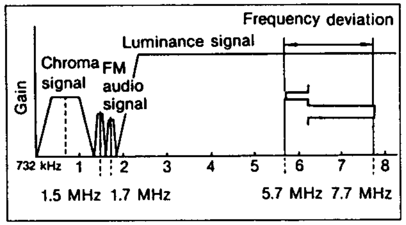
Tape recorded in the Hi8 video system
Tape recorded in the standard 8 mm video system
→ The recording mode is selected automatically

- A tape recorded in the Hi8 video system cannot be played back with an conventional 8 mm video camera recorder.
- A standard 8 mm tape cannot be recorded in the Hi8 video system.
- A tape for the Hi8 video system cannot be recorded and played back in the Hi8 video system with a conventional video camera recorder.
- The recording tape speeds in the Hi8 video system are compatible with the conventional 8 mm format.
  Recording/playback time in the SP mode is 1.5 hours using a E5-90/P5-90 tape or the equivalent.

Cassette used	**With this unit**		
	Recording		**Playback**
	Hi8	**Normal**	
Standard 8 mm tape	No	Yes	Yes
Hi8 tape	Yes	Yes	Yes

(A-3)

Frequency allocation of the hi-fi stereo system

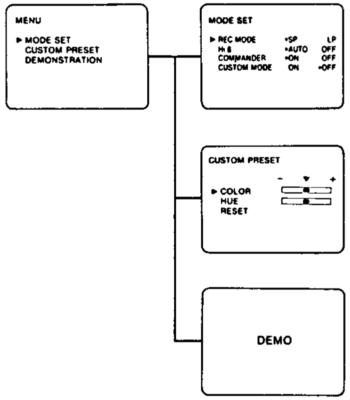


Hi-Fi Stereo System

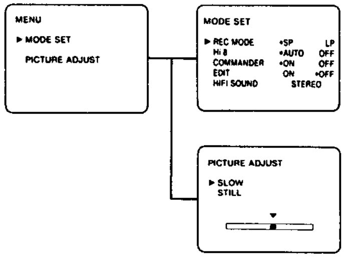
On the 8 mm video standard track the sound is recorded/played back in AFM hi-fi monaural. On this camcorder, an additional AFM hi-fi stereo sound can be recorded on the standard track.
The AFM hi-fi stereo sound is recorded as L+R on the 1.5 MHz carrier and L−R on the 1.7 MHz carrier in FM as illustrated. **(A-3)** This method was adopted to maintain compatibility with the conventional AFM hi-fi monaural sound.
When playing back the tape recorded in this hi-fi stereo system, a matrix circuit is used to produce the L and R stereo sounds separately.
When a conventional AFM hi-fi monaural model is used to playback a tape recorded by this camcorder in AFM hi-fi stereo, the playback sound will be in a L+R monaural sound. This is because the monaural models will playback only the sound recorded in the 1.5 MHz carrier.
The AFM hi-fi stereo system of this camcorder enables you to enjoy a live stereo sound atmosphere.

Compatibility with the conventional 8 mm video format
When you playback a tape recorded in AFM stereo hi-fi on a conventional 8 mm video equipment, the sound will be in monaural.

(B-1)


MENU
▶ MODE SET
CUSTOM PRESET
DEMONSTRATION
MODE SET
▶ REC MODE •SP LP
Hi 8 •AUTO OFF
COMMANDER •ON OFF
CUSTOM MODE ON •OFF
CUSTOM PRESET
− ▼ +
▶ COLOR
HUE
RESET
DEMO

(B-2)


MENU
▶ MODE SET
PICTURE ADJUST
MODE SET
▶ REC MODE •SP LP
Hi 8 •AUTO OFF
COMMANDER •ON OFF
EDIT ON •OFF
HIFI SOUND STEREO
PICTURE ADJUST
▶ SLOW
STILL
▼

On the Menu System

The menu system of this camcorder enables setting and adjustments to further enjoy the features and functions. The menu is displayed in the viewfinder or on the TV screen if connected to a TV. The menu consists of two main parts, one for use during camera recording and the other for use during playback. Refer to the following section for a quick overview of the two menus.

Menu System for Camera Recording

(B-1)

MODE SET
Various mode settings for camera recording is made in this menu.

CUSTOM PRESET
The camcorder can be adjusted to perform camera recording in the desired picture.

DEMONSTRATION
The camcorder automatically shows the manual mode, four programmed AE modes, each title mode, menu displays in sequence.

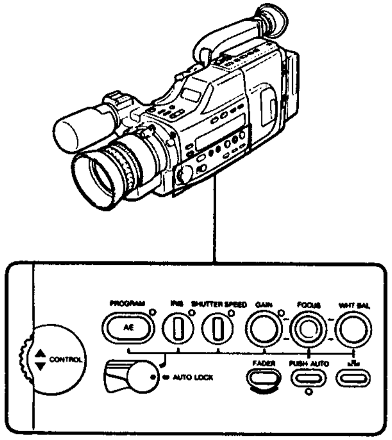
Menu System for Playback

(B-2)

MODE SET
Various mode settings for playback are made in this menu.

PICTURE ADJUST
The playback picture can be adjusted to obtain maximum quality.

(C)



Selecting the Camera Recording Mode

(C)

Various camera recording modes are available in this camcorder. Automatic adjustment of aperture, gain, white balance, focus, plus the locked shutter speed offers worry-free camera recording for the beginner. Manual adjustment of each of these parameters offers effective camera recording to meet different object and shooting conditions.
Plus, the programmed AE mode offers additional shooting techniques to enrich the creation of your video program.

Full Automatic Adjustment Mode

When the AUTO LOCK switch is set to AUTO LOCK, aperture, gain, white balance, and focus is automatically adjusted and the shutter speed is locked to the normal speed (1/50).

Manual Adjustment Mode

By setting the AUTO LOCK switch down, each parameter can be adjusted manually.

IRIS

- Each press of this button switches between automatic and manual adjustment.
- 15 aperture values (F1.4 to F16) plus aperture close can be selected using the CONTROL dial in the manual mode.

SHUTTER SPEED

- Each press of this button switches the shutter speed as follows:
  1/50 (No indication) → 1/120
  ↑ 1/1000 ← ↵
- 28 shutter speeds (1/50 to 1/10000) can be selected using the CONTROL dial in the manual mode.

GAIN

- Each press of this button switches between automatic and manual adjustment.
- 8 gain levels (−3 dB to +18 dB) can be selected using the CONTROL dial in the manual mode.

Continued on the next page

FOCUS

- Each press of this button switches between automatic and manual focusing.

PUSH AUTO
- When pressed during manual focusing mode, automatic focusing is activated for the extension that the button is pressed.

WHT BAL (white balance)

- Each press of this button switches the mode as follows:

Automatic → ⛶
(no indication) (One-push adjustment)
↑ ↓
💡 (Indoors) ← ☀ (Outdoors)

⛶ (One-push white balance)
- When pressed during ⛶ mode, the white balance can be adjusted manually.

Programmed AE Modes

By setting the AUTO LOCK switch down, four programmed AE modes can be selected to match distinctive camera recording conditions.

Portrait mode
Use to focus on the subject and to have the background out of focus. The aperture and shutter speed is automatically adjusted to maintain the appropriate exposure according to the size and brightness of the subject.

Sports mode
Use to shoot subjects moving at high speeds and then play it back clearly in slow or still. The aperture and shutter speed is automatically adjusted to maintain the appropriate exposure according to the speed of the subject.

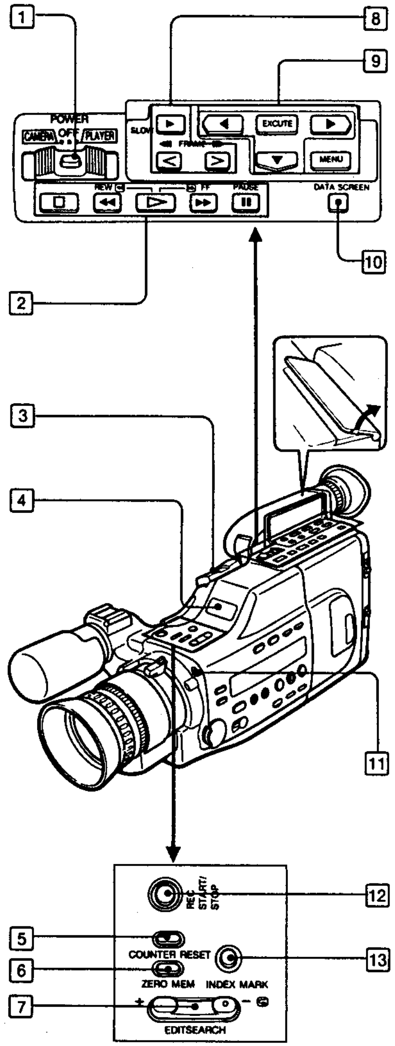
Aperture priority mode
Select the desired aperture (F1.4 to F16) with the CONTROL dial and the shutter speed will be automatically adjusted to maintain the appropriate exposure.

Shutter priority mode
Select the desired shutter speed (1/50 to 1/10000) with the CONTROL dial and the aperture will be automatically adjusted to maintain the appropriate exposure.

Note
Focus and white balance can either be adjusted automatically or manually during the programmed AE mode. The adjusting method is same as those in the "Manual Adjustment Mode."

Identifying the Parts

(D-1)


1
2
3
4
5
6
7
8
9
10
11
12
13
POWER
CAMERA
OFF
PLAYER
SLOW
FRAME
EXECUTE
MENU
REW
FF
PAUSE
DATA SCREEN
REC START/STOP
COUNTER RESET
ZERO MEM
INDEX MARK
EDITSEARCH

(D-1)

For details of the use of each parts, refer to the pages indicated.

1 **POWER switch**
CAMERA: for camera recording
PLAYER: for playing back or editing tapes
OFF: power off

2 **Tape transport buttons ㊼, ㊾**
■ (stop)
◀◀ REW (rewind)
▷ (playback)
▶▶ FF (fastforward)
❚❚ PAUSE

3 **Power zoom button (70)**

4 **Remote control sensor ⑳**

5 **COUNTER RESET button ㊲, (52)**

6 **ZERO MEM (memory) button ㊲, (57)**

7 **EDITSEARCH (and recording review) buttons ㉟**

8 **Tape transport buttons ㊺**
❚▶ SLOW (slow speed playback)
< ◀❚❚/❚❚▶ > (direction switch/frame-by-frame playback)

9 **Menu operation buttons ㊸, (61)**
MENU
EXECUTE
◀/▶/▼

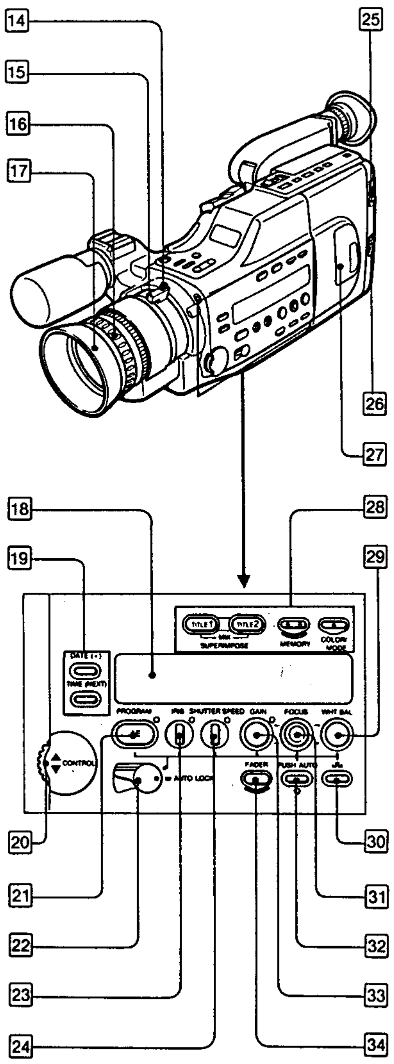
10 **DATA SCREEN button ㊿**

11 **Tally lamp (119)**
Lights during camera recording. Blinks when the battery is exhausted, or the tape reaches its end.

12 **REC (recording) START/STOP button for low position camera recording ㉜**
Use this button instead of the START/STOP button for low-position recording.

13 **INDEX MARK button ㊴, (59)**

(D-2)


14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
TITLE 1
TITLE 2
SUPERIMPOSE
MEMORY
COLOR/MODE
DATE (+)
TIME (NEXT)
PROGRAM
IRIS
SHUTTER SPEED
GAIN
FOCUS
WHT BAL
CONTROL
AUTO LOCK
FADER
PUSH AUTO

(D-2)

14 **Macro set button (green) (71)**

15 **Zoom lever (70)**

16 **Focus ring**

17 **Lens hood (71)**

18 **Display window (121)**

19 **DATE (+)/TIME (NEXT) buttons ㉘, ㉟**

20 **CONTROL dial (84)**
Move up or down to select the desired parameters during programmed AE mode and manual adjustment mode.

21 **PROGRAM AE (programmed auto exposure) button (83)**

22 **AUTO LOCK switch**
To adjust the aperture, gain, focus, white balance automatically and the shutter speed locked to 1/50, set to AUTO LOCK.

23 **IRIS button**

24 **SHUTTER SPEED button**

25 **EJECT (cassette eject) button ㉙**

26 **BATT (battery eject) knob ㉒**

27 **Cassette holder**

28 **SUPERIMPOSE buttons (74)**
TITLE 1 button
TITLE 2 button
MEMORY button
COLOR/MODE button

29 **WHT BAL (white balance) button (67)**

30 **(one-push white balance) button (68)**

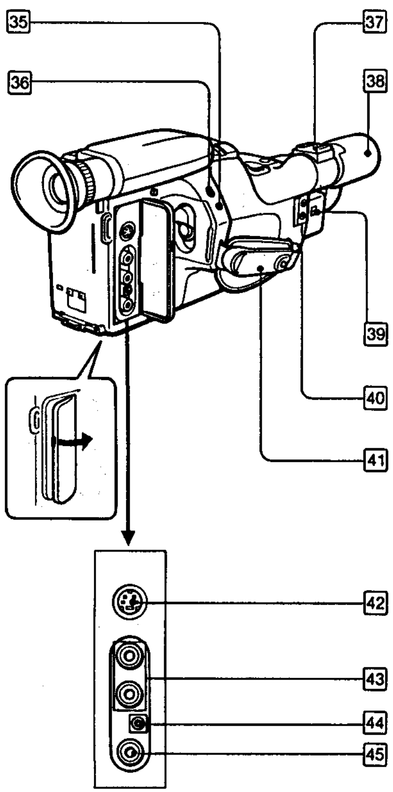
31 **FOCUS button (64)**

32 **PUSH AUTO button (65)**

33 **GAIN button**

34 **FADER button (72)**

(D-3)



(D-3)

35 ∩ (headphones) jack (stereo mini jack)

36 Ⓛ REMOTE connector (stereo mini-minijack)
Connect a wired remote control unit, a editing controller (not supplied), etc.

37 Accessory shoe
Attach a video light, external microphone, (not supplied) etc.

38 Built-in one-point stereo microphone

39 BUILT-IN MIC (microphone)/WIND selector ㉟

40 EXT MIC and DC OUT (microphone power output) jack
Connect an external microphone (not supplied). The DC OUT jack supplies power to it.
When connecting Sony "plug-in-power" microphones, use the MIC jack only.

41 Grip strap ㉜

42 S VIDEO OUT connector (4-pin mini DIN connector)

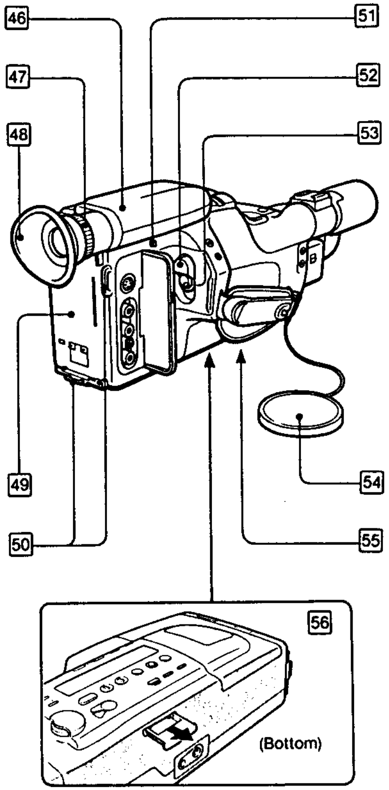
43 AUDIO OUT L/R jacks (phono jacks) ㊹, (112)

44 RFU DC OUT (RFU adaptor DC output) jack (special minijack) ㊺
Attach the supplied RFU adaptor here.

45 VIDEO OUT jack (phono jack) ㊹, (112)

About the Ⓛ (LANC) mark
Ⓛ (LANC) stands for Local Application Control Bus System. The Ⓛ (LANC) connector is used for controlling the tape transport of video equipment and peripherals connected to it. This connector has the same function as the connectors indicated as CONTROL L or REMOTE.

(D-4)



(D-4)

46 Viewfinder
The picture being recorded or played back can be monitored in black and white in here.
Caution indicators, tape operation modes, function modes, menu are also displayed.

47 Viewfinder lens adjustment ring ㉚

48 Eyecup

49 Battery mounting surface ㉒

50 Hooks for shoulder strap

51 PUSH SLIDE button
Press this button and slide the viewfinder to the desired position.

52 STANDBY switch
Slide up to set the camcorder to the standby mode.

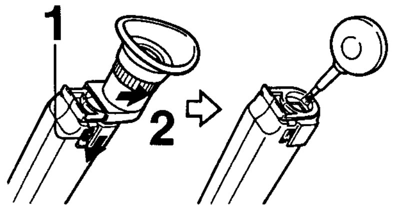
53 START/STOP button
Press to start and stop camera recording.

54 Lens cap

55 Tripod receptacle (bottom)

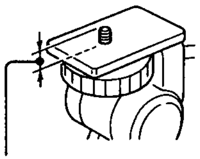
56 Lithium battery compartment (bottom) ㉗

(D-5)



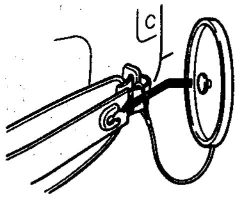
To remove the dust from inside the viewfinder (D-5)
Detach the eyecup as illustrated and clean the surface of the screen with a blower.

(D-6)


Less than 6.5 mm

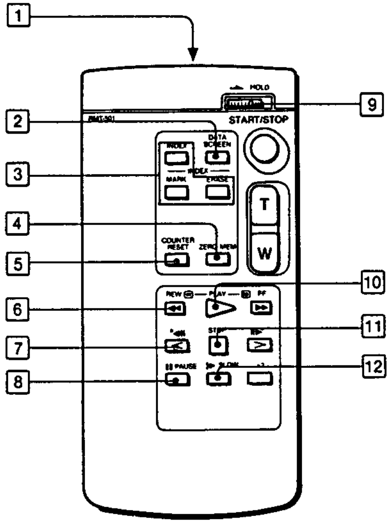
Note on attaching a tripod (D-6)
When attaching a tripod other than Sony's, make sure that the length of the camera mounting screw is less than 6.5 mm. Otherwise, the screw may damage the inner parts of the camcoder.

(D-7)



When the lens cap is removed (D-7)
Attach the lens cap to the grip strap.

(D-8)



Wireless Remote Commander

(D-8)

You can record or play back a tape from a distance. The buttons on the Commander with the same name or mark as those on the camcorder have the same function. The buttons with an asterisk (*) is available on the Commander only.

When you use the Commander
Be sure to select "COMMANDER ON" in the MODE SET menu (page 41 and 59) and then start operating the camcorder. Point the Commander to the remote sensor on the camcorder.

1 Transmitter

2 DATA SCREEN button ㊿

3 INDEX buttons ㊴, (54)
INDEX button*
INDEX MARK button
INDEX ERASE button*

4 ZERO MEM (memory) button ㊲, (52)

5 COUNTER RESET button ㊲, (52)

6 ◀◀ REW (rewind) button ㊼

7 </◀II (reverse direction/reverse frame) button ㊾

8 II PAUSE button ㊽

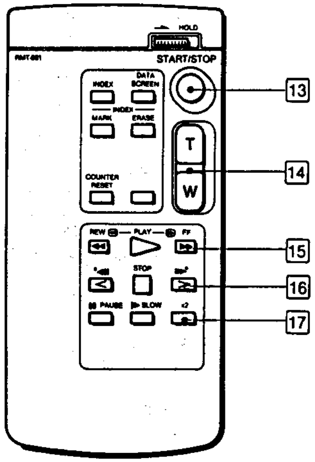
9 HOLD switch*
Slide in the direction of the arrow to prevent the buttons from being accidentally depressed.

10 ▷ PLAY button ㊼

11 ■ STOP button ㊼

12 I▶ SLOW button ㊽

(D-9)



(D-9)

13 **START/STOP button**
Press to start and stop camera recording.

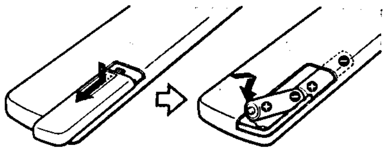
14 **Power zoom button (70)**

15 **▶▶ FF (fast forward) button ㊼**

16 **>/▮▮▶ (forward direction/forward frame) button ㊾**

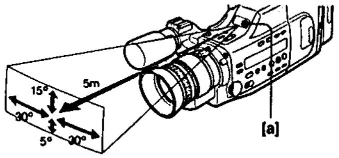
17 **X 2 button* ㊽**
Provided only on the Commander.

(D-10)



Inserting batteries
(D-10)
Insert two R6 (size AA) batteries with polarity positioned correctly.

(D-11)



Remotely controllable range
(D-11)
Point the Commander towards the remote sensor. **[a]**

Notes on batteries
- The batteries will last for about six month under normal operation. However, if the Commander will not be used for a long period, remove the batteries to avoid possible damage from battery leakage.
- Do not let direct sunlight or strong light source light the camcorder's remote control sensor. Remote control with the Commander may not be effective.
- The command mode of the Commander is VTR 2. Avoid using Sony VTRs with the same command mode at the same time.

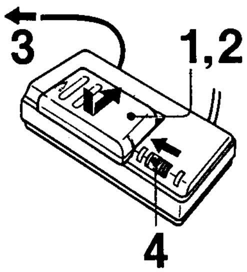
Connecting the Power Sources

First Choose the Power Source

Place	Power source	Accessory to be used
Outdoors	Battery pack	Battery pack NP-66H (supplied), NP-77H NP-77, or NP-55
	Alkaline batteries	Battery case EBP-55, or EBP-77
Indoors	House current	AC power adaptor AC-V35 (supplied), AC-V30, or AC-V55
In the car	12 V or 24 V car battery	DC pack DCP-55, or AC power adaptor AC-V55 and car battery cord DCC-16AE

Note on power sources
Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted tape. If disconnected, supply the power again immediately.

(E-1)



Using the Battery Pack

Step 1
Charge the battery pack. **(E-1)**

1 **Align the groove on the battery pack with those on the AC power adaptor.**

2 **Slide in the battery pack to the right as illustrated.**

3 **Connect the AC power adaptor to a wall outlet.**

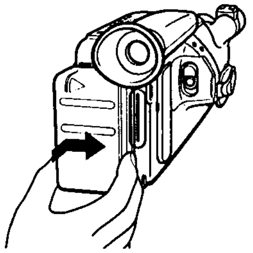
4 **Set the CHARGE/VTR selector to CHARGE.**
Charging begins.

	NP-66H (supplied)	NP-55	NP-77	NP-77H
Required charging time	100	60	120	140

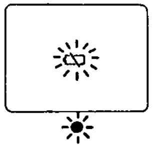
(approx. minutes using AC-V35)

Refer to the operating instructions of the AC power adaptor for details.

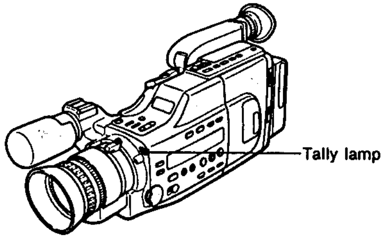
(E-2)



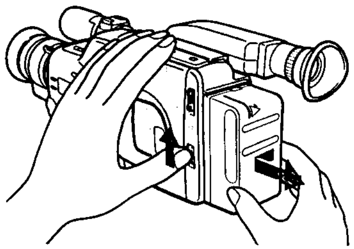
(E-3)



(E-4)



(E-5)



Step 2
Mount the battery pack on the camcorder. **(E-2)**

1 **Align the right side of the battery pack with the line on the camcorder.**

2 **Slide in the battery pack to the right as illustrated.**

Notes
- Make sure that the battery fits completely on the mounting surface of the camcorder. Imperfect mounting may damage the projections of the camcorder.
- If your nose touches the battery pack, adjust the position of the viewfinder by sliding it while pressing PUSH SLIDE.

Battery life
A fully charged battery pack lasts for:

	NP-66H (supplied)	NP-55	NP-77	NP-77H
Battery life	65	35	70	90

(approx. minutes continuous recording when used indoors)

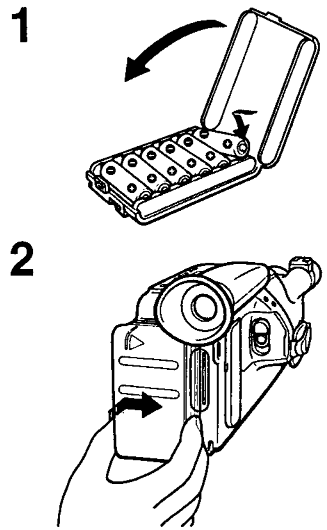
When the battery becomes weak, the 🔋 indication and the red lamp in the viewfinder **(E-3)** and the tally lamp **(E-4)** blinks. Replace the battery pack with a fully charged one.

To remove the battery pack
(E-5)
Hold the BATT knob up, and slide the battery pack to the left.

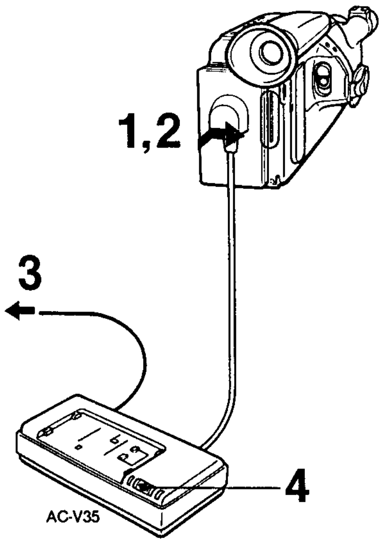
Other options
- AC-V55 AC power adaptor:
  You can charge two battery packs.
- BC-55, BC-77 portable battery charger:
  You can charge a battery pack on 100 – 240 V AC.
- DC-V30 car battery pack:
  You can charge a battery pack by connecting the car battery charger to the cigarette lighter socket.

If you have an NP-4000
You can use it for long outdoor recording.

(E-6)



(E-7)



Using Alkaline Batteries

(E-6)
The battery case EBP-55 or EBP-77 (not supplied) is required.

1 **Insert R6 (size AA) alkaline batteries into the battery case.**
(6 batteries for EBP-55 and 12 batteries for EBP-77)

2 **Attach the battery case in the same way as the battery pack.**

Battery life

	EBP-55	EBP-77
Battery life	35	95

(approx. minutes continuous recording when used indoors)

To remove the battery case
Proceed in the same manner as the battery pack.

Notes on battery life while using the battery case
- Batteries does not last long in cold places.
- No indication appears in the viewfinder to warn of a weak battery.

Using the House Current

(E-7)
The supplied AC-V35 AC power adaptor is required.

1 **Align the right side of the connecting plate with the line on the camcorder.**

2 **Slide in the connecting plate to the right.**

3 **Connect the AC power adaptor to a wall outlet.**

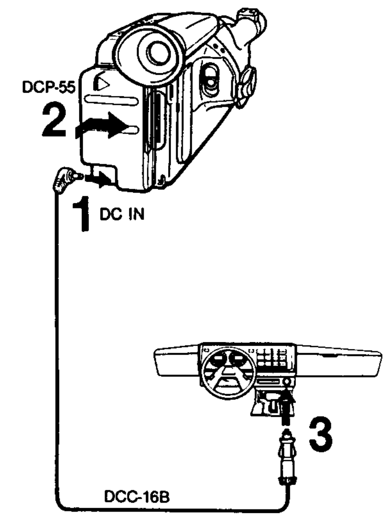
4 **Set the CHARGE/VTR selector on the AC power adaptor to VTR.**

See the operating instruction of the AC power adaptor for further information.

To remove the connecting plate
Proceed in the same manner as the battery pack.

Other power sources
The AC-V30 or AC-V55 AC power adaptor can also be used.

(E-8)



Using the Car Battery

(E-8)

The DCP-55 DC pack (not supplied) is required.

1 **Insert the DCC-16B car battery cord, supplied with the DCP-55 DC pack into the DC IN jack on the DC pack.**

2 **Align the right side of the DC pack with the line on the camcorder and slide it to the right.**

3 **Connect the DCC-16B car battery cord to the cigarette lighter socket of a car (12 V or 24 V).**

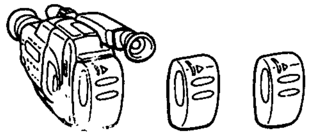
To remove the DC pack
Proceed in the same manner as the battery pack.

Other options
The AC-V55 AC power adaptor and the DCC-16AE car battery cord can also be used to operate this camcorder on a 12 V or 24 V car battery.

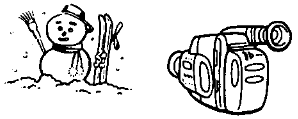
Using the Best of the Battery Pack

How to prepare the rechargeable battery packs

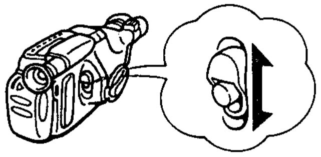
Have a sufficient battery pack power to perform 2 or 3 times as much recording than you have planned.
"Battery life" as indicated in the instruction manual or catalogue of the camcorder is measured by the continuous recording time of the camcorder, placed at a room temperature using a full-charged battery.



Battery life is shorter in a cold climate.
Battery efficiency is decreased and the battery will be used up more quickly.

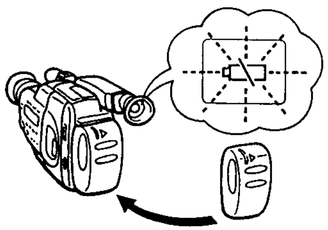


Turn the STANDBY switch of the camcorder off when not recording to save battery power.
A smooth recording can be made even if recording is stopped and started again.
While positioning the subject, selecting an angle, or looking through the viewfinder, the lens moves automatically and the battery is used. The battery is also used when a tape is inserted or removed.



When the rechargeable battery pack should be replaced

When the ▭ mark in the viewfinder changes from slow blinking to rapid blinking while you are recording.
Turn off the power switch of the camcorder and replace the battery pack. Leave the tape in the camcorder in order to obtain a smooth recording after the battery pack is replaced.

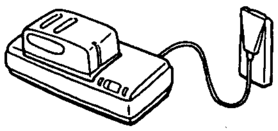


Notes on charging

Before using the battery pack, charge it sufficiently. A brand-new battery pack is not charged.

Recharge the battery pack when it is exhausted.

- If recording is completed before the ▭ mark appears in the viewfinder, it is recommended that you remove the tape, set POWER to CAMERA, slide up STANDBY, and leave the camcorder until the ▭ mark blinks rapidly.
- Repeated charging while some capacity remains causes a lowering of battery capacity. However, the original battery capacity can be recovered if you fully discharge and fully charge the battery again.



Recharge the battery pack before using.
If the battery pack is charged fully but not used for a long time (about 1 year), it becomes discharged.
Charge it again but in this case the battery life will be shorter than normal. After several charging and discharging cycles, the battery life will recover its original capacity.

Keep the terminals clean

If the terminals (metal parts on the back) are not clean, the battery duration will be shortened.

When the terminals are not clean or when the battery pack has not been used for a long time, install and remove the battery pack from time to time. This will improve the contact condition Also wipe the + and – terminals with a soft cloth or paper.

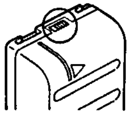
Notes on the rechargeable battery pack

Why the battery pack heats up
During charging or recording, the battery pack heats up. This means energy has been generated and a chemical change has occurred inside the battery pack, but this is not dangerous.

How to care for the battery pack

- Remove the battery pack from the camcorder after using it, and keep it in a cool place.
  When the battery pack is attached to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is turned off. It causes overdischarging and will shorten battery life.
- The battery pack is always discharging even when it is not in use after charging. Thus, it is recommended you charge the battery before using.

How to use the switch on the battery pack
This switch is provided so that you can remember the charging condition. Set the switch to the "no mark" position when charging is completed. Set the switch to the "red mark" position when the battery is used up.

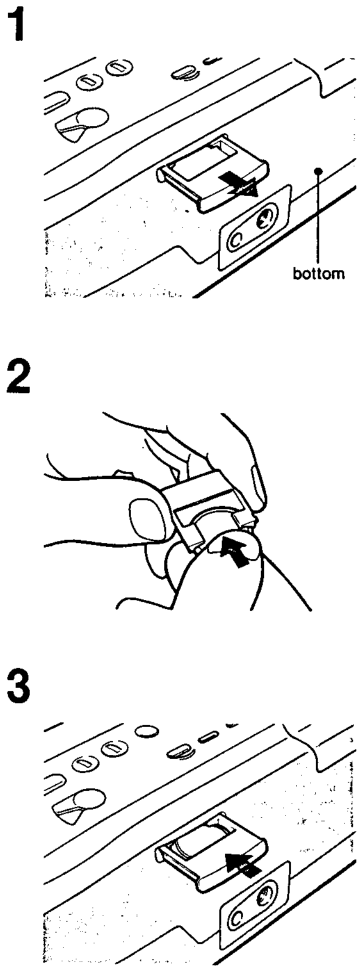


How many times can the battery pack be recharged
It can be fully charged and discharged about 500 times under normal temperatures. If the ▭ mark blinks rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully caharged one.

Temperature during charging
Lower temperature require a longer charging time. Charging under temperatures ranging from 10°C to 30°C is recommended.

Setting the Date and Time

(F-1)



Inserting the Lithium Battery

(F-1)

This camcorder uses a lithium battery to activate the clock and to keep the titles in the memory.
Install the supplied lithium battery before operating it for the first time.

1 **Pull out the lithium battery holder from the bottom of the camcorder.**

2 **Install the supplied CR2025 lithium battery with the + side facing the other side.**

3 **Install the lithium battery holder to the bottom of the camcorder.**

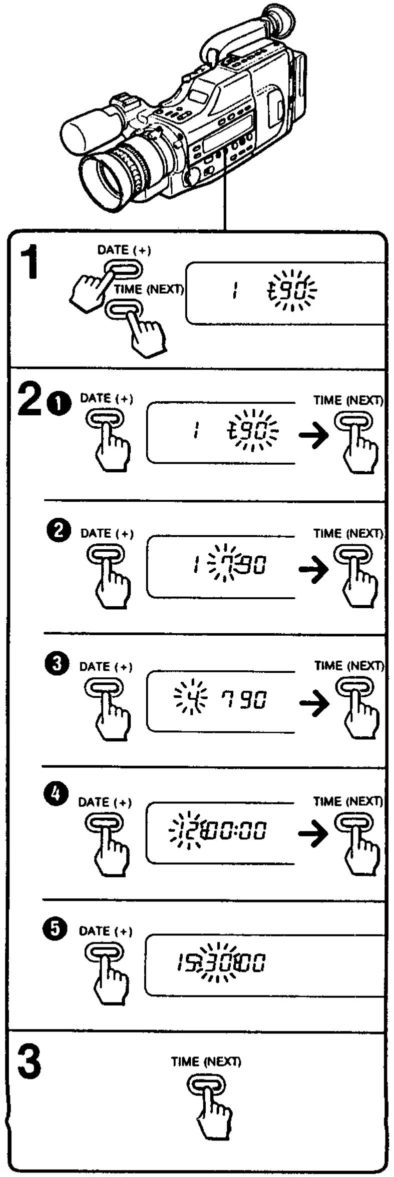
To remove the lithium battery
Pull out the lithium battery holder from the bottom of the camcorder and pull out the lithium battery.

Note on battery life
The battery lasts for approximately 1 year under normal operation. When the lithium battery becomes weak, the time indication keeps blinking in the display window and blinks in the viewfinder for about 5 seconds when the POWER switch is set to CAMERA. **In this case, replace the battery with a Sony CR2025.** After replacing the lithium battery, readjust the date and time. If the battery pack or other power sources were attached during lithium battery exchange, readjustment is not necessary.

Cautions

- Keep the lithium battery out of the reach of children.
  Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Battery may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

(F-2)



Setting the Date and Time

(F-2)

Before you begin

- Check that a power source is installed to the camcorder.
- Set the POWER switch to CAMERA and slide the STANDBY switch up.

Operation

1 **Press DATE (+) and TIME (NEXT) simultaneously for more than 3 seconds.**
The date indication blinks in the display window. The DATE button now functions as + (advance the number) and the TIME button functions as NEXT (execute). If you went passed the desired number, keep pressing the + button. The number eventually returns to the original one.

2 **Adjust the year ❶, month ❷, day ❸, hour ❹, and minute ❺ in this order.**
First, adjust the blinking digits with +, and then press NEXT.

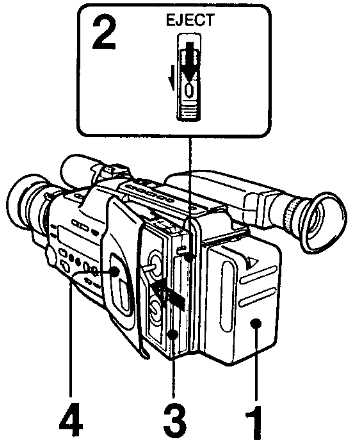
3 **Press NEXT to set the seconds to "00".**
The clock starts operating.

To correct date and time setting
Repeat steps 2 and 3.

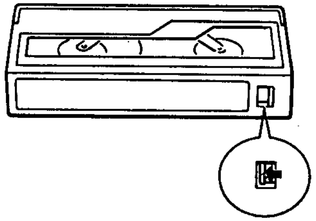
To advance the digits faster
Keep pressing +.

To check the preset date and time
Press DATE or TIME. When you press the same button again, the indication is cleared.

(G-1)



(G-2)



Inserting Tapes

(G-1)

1 **Check that a power source is installed.**

2 **Press and slide the EJECT button.**
The cassette holder automatically opens. Do not open it forcibly while it is moving.

3 **Insert a cassette with the window facing outside.**

4 **Press the PUSH mark to close the cassette holder.**

Ejecting the Tape

1 **Check that a power source is installed.**

2 **Press and slide the EJECT button.**
The cassette holder automatically opens.

3 **Take out the tape.**

4 **Press the PUSH mark to close the cassette holder.**

Preventing Accidental Erasure

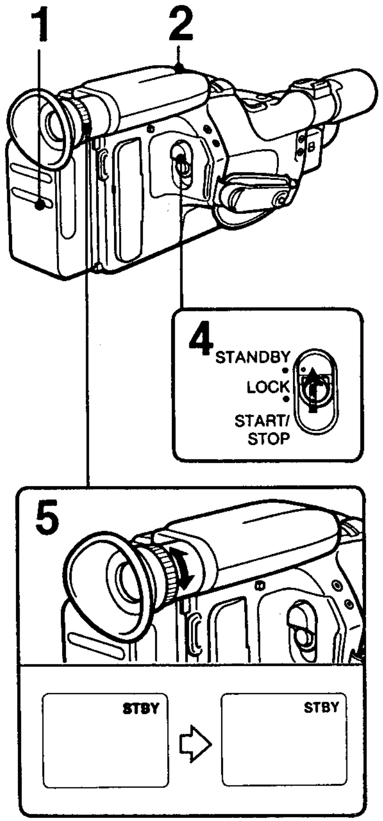
(G-2)

Slide out the red tab on the cassette to prevent recording. To re-record on the same tape, slide the tab in.

Notes on cassette handling

- Never insert anything in the small holes on the rear of the cassette. These holes are used to sense the type and thickness of the tape, or if the tab is out or in, etc.
- Store tapes in their cases and keep them in an upright position to prevent intrusion of dust and uneven winding.

(H)



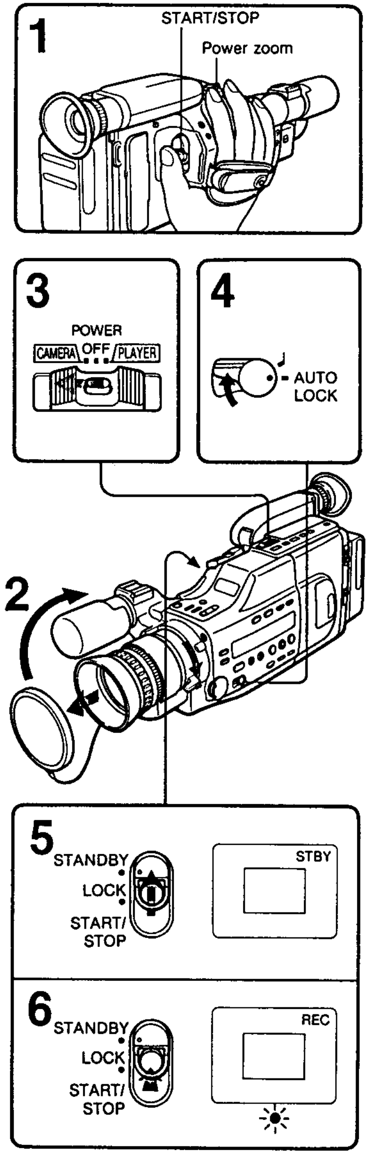
Adjusting the Viewfinder Lens

(H)

The position of the viewfinder lens for optimum vision varies depending upon the person. Adjust it when using the camcorder for the first time, or when using it after someone else.

1. **Check that a power source is installed.**
2. **Hold down the green button and slide the POWER switch to CAMERA.**
3. **Insert a cassette.**
4. **Slide the STANDBY switch up.**
5. **Turn the viewfinder lens adjustment ring so that the "STBY" indication in the viewfinder comes into focus.**

(I-1)



Recording a Picture with the Automatic Adjustments

(I-1)

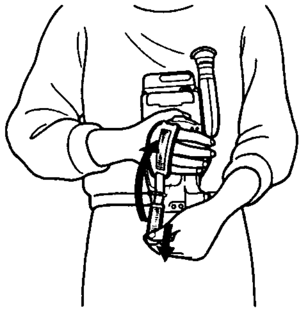
Before recording "once-only" events, we strongly recommend making a trial recording and checking that everything is working perfectly.

1. **Hold the camcorder as illustrated.**
   Put your hand through the grip strap and check that your thumb easily touches the START/STOP button.
2. **Remove the lens cap and attach it to the grip strap.**
3. **Hold down the green button and slide the POWER switch to CAMERA.**
4. **Set the AUTO LOCK switch to AUTO LOCK and turn the zoom lever downwards.**
5. **Slide the STANDBY switch up.**
   "STBY" and the auto-focus frame appear in the viewfinder. The camcorder is now set to the recording standby mode. The automatic focusing functions within the objects inside the auto-focus frame. Do not turn or stop the focus ring forcibly.
6. **Press the START/STOP button.**
   "REC" appears and the red lamp lights in the viewfinder. The camcorder is recording.

To stop recording momentarily
Press the START/STOP button again. The camcorder enters the standby mode with "STBY" indication in the viewfinder.

To stop recording
Slide the STANDBY switch down and set the POWER switch OFF.

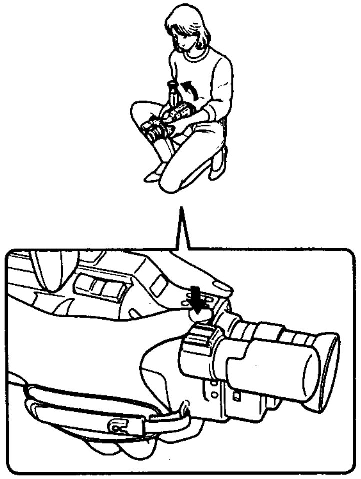
(I-2)



How to fix the grip strap
(I-2)
In step 1 on the previous page, hold the camcorder pressed to your body and pull the grip strap upwards.

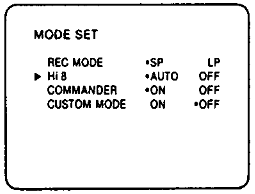
When the viewfinder touches your nose
Press the PUSH SLIDE button and slide the viewfinder to the desired position.

(I-3)



For low-position shooting
(I-3)
The viewfinder can be turned up 90 degrees. Press the REC START/STOP button in the front of the camcorder instead of the START/STOP button to start and stop the camera recording.

(I-4)

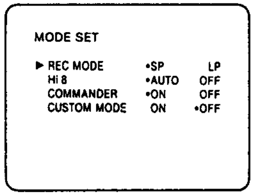


```
MODE SET

  REC MODE      •SP     LP
▶ Hi 8          •AUTO   OFF
  COMMANDER     •ON     OFF
  CUSTOM MODE    ON     •OFF
```

How to record in the Hi8 mode
(I-4)
The camcorder is set to record in the AUTO mode which automatically records in the Hi8 mode when a Hi8 tape is used. To record in the standard mode with the Hi8 tape change the setting in the menu.
See "Using the Menu during Camera Recording" on page 41. On the playback compatibility of Hi8 tape and standard tape refer to page 7.

(I-5)



```
MODE SET

▶ REC MODE      •SP     LP
  Hi 8          •AUTO   OFF
  COMMANDER     •ON     OFF
  CUSTOM MODE    ON     •OFF
```

When recording a long continuous programme
(I-5)
The camcorder is set to record in the SP (Standard play) mode. To record a long continuous programme, change the setting in the menu to the LP (Long play) mode. In the LP mode, you can record as twice long as in the SP mode. See "Using the Menu during Camera Recording" on page 41. Also, be sure to have a sufficient battery pack.

Notes on recording
- To record from the beginning of the cassette, run the tape for about 15 seconds before recording. This will avoid missing the starting point when the tape is played back.
- If the POWER switch is moved during recording, the tape will stop.
- When moving from indoors to outdoors, or vice versa, slide the STANDBY switch up and point the camcorder at a white object for about 15 seconds so that the white balance is properly adjusted.

Note on standby mode
If you leave the camcorder in the standby mode for 5 minutes or more, the camcorder will automatically be turned off. To resume the standby mode, slide the STANDBY switch down once and slide it up again. To start recording, press the START/STOP button.

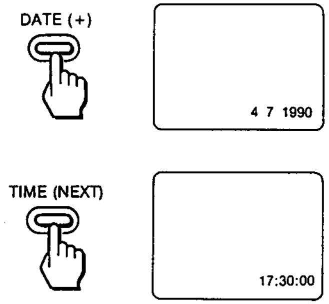
Notes on light sources
- A vertical band may appear when a subject such as a candle flame or a light is shot against a dark background.
- If you shoot an object under bright lighting conditions just after shooting in a dark place, the picture may not appear in the viewfinder. In this case, point the camcorder to another direction.

Brightness Levels

The single greatest influence on picture quality is the brightness level. Using the following chart as a reference, take a few minutes to familiarize yourself with brightness levels to improve your recording.

Snow-covered mountains Snow fields Sandy beach, clear day in summer	Unit: lux	ND filter recommended
Clear day, mid-day (100,000) Clear day, mid-afternoon (35,000) Overcast day, mid-day (32,000)	100,000	Normal Recording
	10,000	
Overcast day, one hour after sunrise (2,000) Office lit by fluorescent lamps, near window (1,000) Clear day, one hour before sunset (1,000) Department store counter (500–700)	1,000	
Station wicket (650) Office lit by fluorescent lamps (400–500)	500	
Room lit by two 30 W fluorescent lamps (300) Subway station platform (300)	300	
Arcade at night (150–200)	100	
Theater lobby (15–35) Candlelight (10–15)	10	Video light recommended

(I-6)



To Record Date or Time

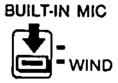
(I-6)

1 **Set the camcorder in the camera recording standby or camera recording mode.**

2 **Press the DATE button to indicate the date or the TIME button to indicate the time.**
The date or time displayed in the viewfinder will be recorded together with the picture.

To stop recording date or time
Press the DATE or TIME button. The indication is cleared and the recording continues.

(I-7)

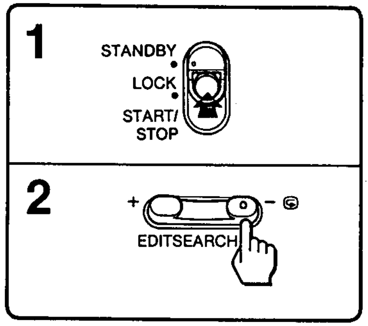


When there is Strong Wind

(I-7)

Set the BUILT-IN MIC selector to WIND.
The noise resulting from the wind will be reduced.
After recording, set it to the upper (green) position.

(I-8)



To Check the Last Portion of the Recording

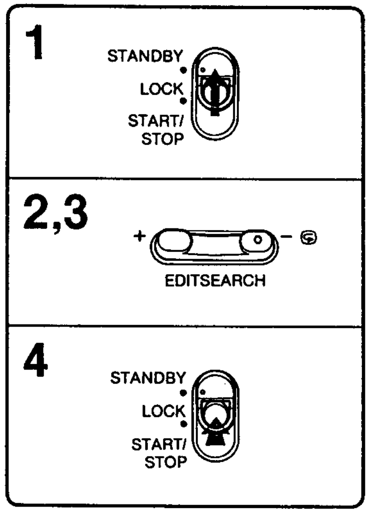
(I-8)

1 **Set the camcorder in the recording pause mode by pressing the START/STOP button.**

2 **Press the ⊖ side of the EDITSEARCH button.**
The last few seconds of the recorded portion is rewound and then is played back in the viewfinder. After a few seconds of playback, the camcorder returns to the recording pause mode.

If the picture was not recorded
the video heads may be contaminated. Clean the heads using the Sony V8-25CLH video head cleaning cassette or the equivalent.

(I-9)


1
STANDBY
LOCK
START/
STOP
2,3
+
−
EDITSEARCH
4
STANDBY
LOCK
START/
STOP

To Re-record on a previously Recorded Portion

(I-9)

1 **Slide the STANDBY switch up.**
The camcorder enters the standby mode.

2 **Look in the viewfinder and search for the point from where you want to begin the recording.**
Keep pressing the + side of the EDITSEARCH button to advance the picture at a normal playback speed or the − side to reverse the picture.

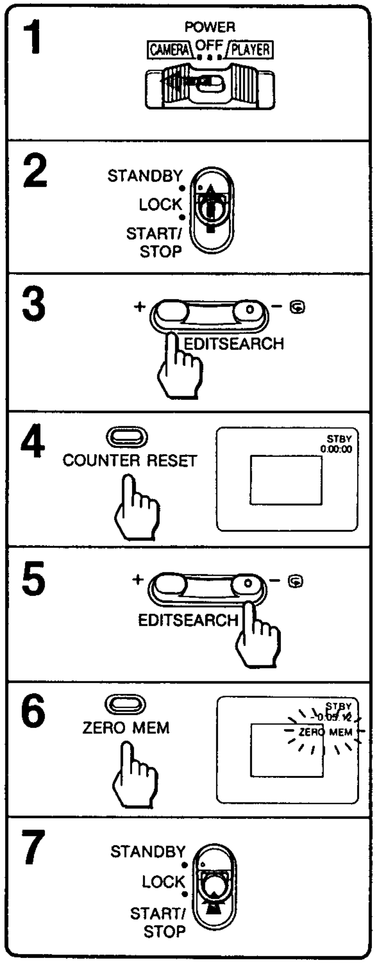
3 **At the desired point, release the EDITSEARCH button.**

4 **Press the START/STOP button to start recording.**

As long as the tape is not removed, the re-recorded picture will be smoothly connected even if the STANDBY switch is slid down and slid up again, or the power is turned off and on.

To stop recording
Slide the STANDBY switch down.

(I-10)


1
POWER
CAMERA
OFF
PLAYER
2
STANDBY
LOCK
START/
STOP
3
+
−
EDITSEARCH
4
COUNTER RESET
STBY
0:00:00
5
+
−
EDITSEARCH
6
ZERO MEM
STBY
0:00:00
ZERO MEM
7
STANDBY
LOCK
START/
STOP

To Re-record a Picure in the Middle of a Recorded Tape (Insert Recording)

(I-10)

1 **Hold down the green button and slide the POWER switch to CAMERA.**

2 **Slide the STANDBY switch up.**
The camcorder enters the recording standby mode.

3 **While looking in the viewfinder, keep pressing the + or − side of the EDITSEARCH button and release it at the point where the insertion should end.**

4 **Press the COUNTER RESET button.**
The counter is reset to "0:00:00".

5 **While looking in the viewfinder, keep pressing the − side of the EDITSEARCH button and release the button at the point where the insertion should start.**

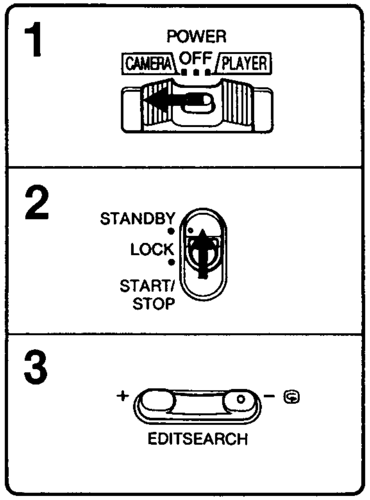
6 **Press the ZERO MEM buttton.**
The ZERO MEM indication blinks.
The insert end point is stored in the memory.

7 **Press the START/STOP button.**
Insert recording starts. It stops automatically around the counter zero point.

To change the end point of the edit
Press the ZERO MEM button so that the ZERO MEM indication disappears. Start from step 3.

Note
The picture may be distorted at the end of the inserted portion when it is played back.

(I-11)



Playing Back the Picture Instantly

(I-11)

You can check the recorded picture in the viewfinder. The sound is not heard.

1 **Hold down the green button and slide the POWER switch to CAMERA.**

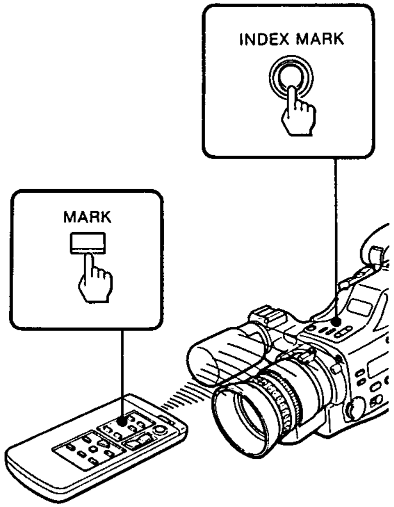
2 **Slide the STANDBY switch up.**

3 **Keep pressing the + or – side of the EDITSEARCH button to playback the picture.**
+ side: To view the playback picture.
– side: To view the playback picture in reverse.

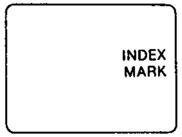
To stop playback
Release the EDITSEARCH button.

To monitor the sound while viewing the playback picture in the viewfinder
1 Connect the headphones to the ∩ jack.
2 Hold down the green button and slide the POWER switch to PLAYER.
3 Press ◀◀ to rewind the tape and press ■ where you want start playing back.
4 Press ▷ to start playback.

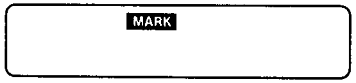
(J-1)



Viewfinder



Display window



Marking Index Signals

The beginning of the desired program can be located easily by marking an index signal and searching for it later.

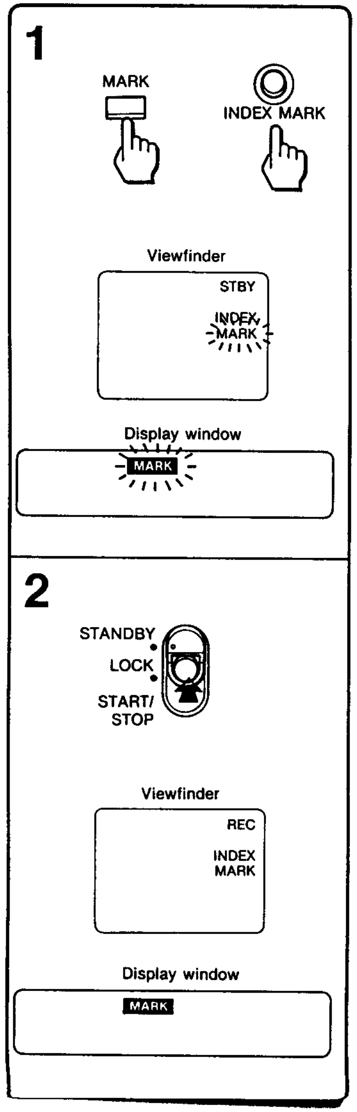
To Mark an Index Signal during Camera Recording

(J-1)

Press the INDEX MARK button on the camcorder or the Commander at the point you wish to locate later.

The INDEX MARK indication appears in the viewfinder and MARK appears in the display window to indicate that the index signal has been marked.

(J-2)



To Mark an Index Signal at the Beginning of Camera Recording

(J-2)

1 **Press the INDEX MARK button on the camcorder or the Commander after setting the camcorder in the camera recording standby mode.**
The INDEX MARK indication appears in the viewfinder with MARK blinking and MARK blinks in the display window.

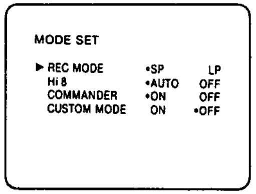
2 **Press the START/STOP button to release the camera recording standby mode.**
The MARK indication stops blinking to indicate that the index signal has been marked.

For other operations using the index signal
See page 54.

Notes
- The index signals can be marked at any desired point. But make sure there is more than 2 minutes of space between two index signals. If there is more than one index signal marked within an interval of 2 minutes on a normal tape run, the unit may not function properly.
- The INDEX MARK indication disappears automatically.
Continue to record until the INDEX MARK disappears so that the recorded index signal can be searched correctly in the playback mode.

Using the Menu during Camera Recording

(K-1)



MODE SET
► REC MODE •SP LP
Hi8 •AUTO OFF
COMMANDER •ON OFF
CUSTOM MODE ON •OFF

MODE SET menu, CUSTOM PRESET menu, and DEMONSTRATION menu can be used during camera recording. In the MODE SET menu, various settings to further enjoy the features of the camcorder can be selected. In the CUSTOM PRESET menu, the camcoder can be set to record in the desired picture tone. In the DEMONSTRATION menu, the camcorder displays the various indications and the operations available.

MODE SET Menu

(K-1)

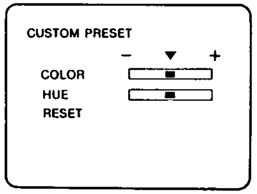
REC MODE SP/LP
- Select SP to record in the SP (Standard play, approximately 20.051 mm/second) mode.
- Select LP to record in the LP (Long play, approximately 10.058 mm/second) mode. It is useful for recording a long continuous programme. The quality of the playback picture in the LP mode, however, will not be as good as that in the SP mode.

Hi8 AUTO/OFF
- Select AUTO to set the recording mode (Hi8 or normal) automatically depending upon the tape being used.
- Select OFF if you wish to record in the normal mode regardless of the type of tape being used.

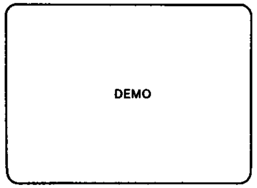
COMMANDER ON/OFF
- Select ON when using the supplied Commander for camera recording.
- Select OFF when the supplied Commander will not be used for camera recording.

CUSTOM MODE ON/OFF
- Select ON to perform camera recording based on the setting made in the CUSTOM PRESET menu. See page 109.
- Select OFF to perform camera recording without the setting made in the CUSTOM PRESET menu.

(K-2)


CUSTOM PRESET
− ▼ +
COLOR
HUE
RESET

(K-3)



CUSTOM PRESET Menu

(K-2)

The camera can be preset to record in the desired picture using the CUSTOM PRESET menu. The items that can be preset are COLOR and HUE. See "Custom Preset Function" on page 109 for details.

DEMONSTRATION Menu

(K-3)

The camcorder will automatically demonstrate the manual modes, programmed AE modes, title modes, MODE SET menu for camera recording, and the CUSTOM PRESET menu. The sequence can be monitored in the viewfinder or on a TV screen if connected.

Operation

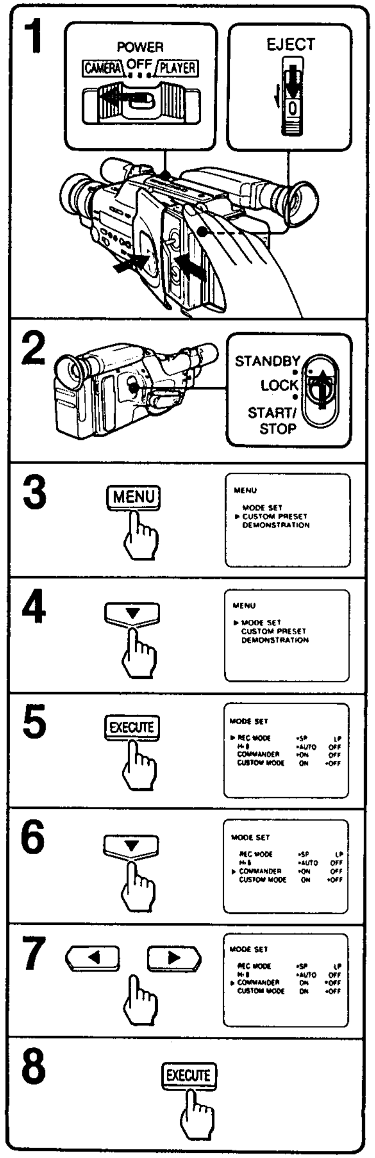
1 **Store 2 titles in the memory referring to pages 74 to 76.**

2 **To monitor the sequence on the TV screen, connect the camcorder and the TV referring to pages 44 to 46 and press DATA SCREEN.**

3 **Call up the MENU display and select DEMONSTRATION referring to page 43.**

4 **To get out of the DEMONSTRATION menu, press ◀, ▶, or ▼.**
To return to the MENU display, press MENU.

(K-4)


1
POWER
CAMERA OFF PLAYER
EJECT
2
STANDBY
LOCK
START/STOP
3
MENU
MENU
MODE SET
▶ CUSTOM PRESET
DEMONSTRATION
4
MENU
▶ MODE SET
CUSTOM PRESET
DEMONSTRATION
5
EXECUTE
MODE SET
▶ REC MODE •SP LP
Hi 8 •AUTO OFF
COMMANDER •ON OFF
CUSTOM MODE ON •OFF
6
MODE SET
REC MODE •SP LP
Hi 8 •AUTO OFF
▶ COMMANDER •ON OFF
CUSTOM MODE ON •OFF
7
MODE SET
REC MODE •SP LP
Hi 8 •AUTO OFF
▶ COMMANDER ON •OFF
CUSTOM MODE ON •OFF
8
EXECUTE

How to Call Up the Menu Display

(K-4)

Press the DATA SCREEN button to display the menu on the TV screen.

Example: To select COMMANDER OFF.

1 **Set the POWER switch to CAMERA and insert a cassette.**

2 **Slide the STANDBY switch up.**

3 **Press the MENU button.**
The MENU display appears.

4 **Press ▼ and move cursor to the desired item.**

5 **Press the EXECUTE button.**
The selected menu appears.

6 **Press ▼ and move cursor to the desired item.**

7 **Press ◀ or ▶ to select the desired setting.**

8 **Press the EXECUTE button.**
The setting is stored in the camcorder and the menu display is cleared.

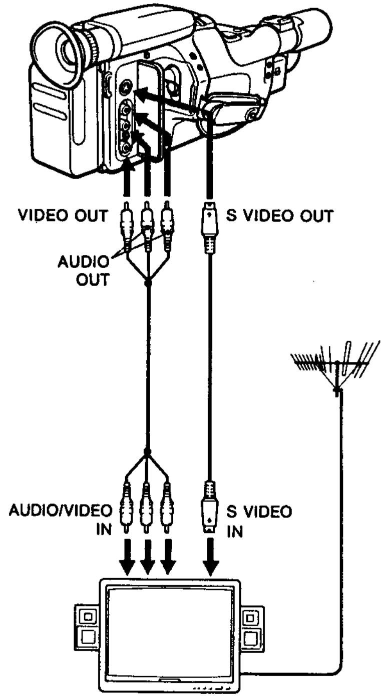
The setting is stored in the memory even if the POWER switch is set to OFF or the battery pack is removed, as long as the lithium battery is installed.

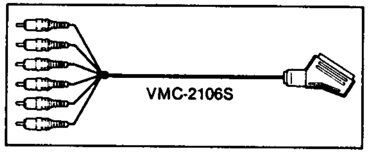
To display another menu
Start from step 1 in "How to Call Up the Menu Display."

To return to the original screen
Press the MENU button.

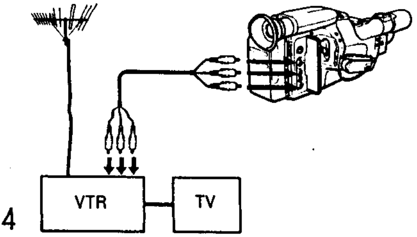
To make multiple settings within one menu
After step 7 in "How to Call Up the Menu Display", press ▼ and move cursor to the desired item.

(L-1)





(L-2)



Connections for Playback

To view the playback picture on the TV screen, the camcorder and TV and/or the VTR must be connected properly. Check the following connecting examples and go to the appropriate section to make the connections required.

Case 1:
Connecting the camcorder to a TV with video/audio input jacks.

Case 2:
Connecting the camcorder to a TV without video/audio input jacks.
For the camcorder supplied with the RFU-90E RFU adaptor.

Case 3:
Connecting the camcorder to a TV without video/audio input jacks.
For the camcorder supplied with the RFU-89EA RFU adaptor and the aerial selector.

Case 1: Connection to a TV with Video/Audio Input Jacks

(L-1)

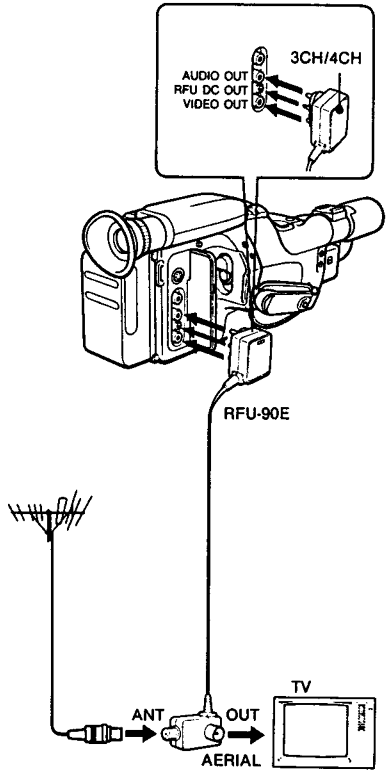
1 **Connect the camcorder and the TV using the supplied AV connecting cable.**
- If your TV has an S video input jack, connect the S VIDEO jack on the camcorder and the S video input jack on the TV using the supplied S VIDEO connecting cable.
- If your TV is a monaural type, connect only the white plug for audio on the TV and select "HIFI SOUND $\boxed{1}$ " in the menu. See "Selecting the Monitor Sound" on page 51.
- If your TV has a 21-pin connector (EUROCONNECTOR), use a connecting cable such as the VMC-2106M (not supplied).

2 **Set the TV/VIDEO selector on the TV to VIDEO.**

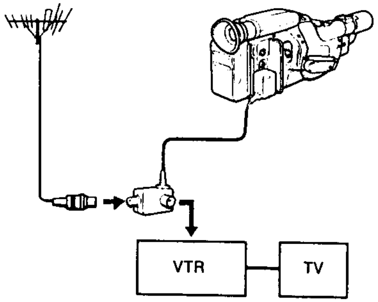
If your TV is connected to a VTR
(L-2)
Connect the camcorder to the VTR instead of the TV.

Note
For details on the TV, refer to the instruction manual of the TV.

(L-3)



(L-4)



Case 2: Connection to a TV without Video/Audio Input Jacks

For the comcorder supplied with the RFU-90E RFU adaptor.
(L-3)

Step 1
Connecting the camcorder, the RFU adaptor, and the TV.

1 **Connect the RFU adaptor to the camcorder.**

2 **Connect the aerial and the RFU adaptor.**

3 **Connect the RFU adaptor to the TV.**

Step 2
Selection of the TV programme position to monitor the camcorder playback.

1 **Set the RF unit selector on the RFU adaptor to either 3CH or 4CH, whichever is not active in your area.**

2 **Turn on the TV and select the 0 position.**

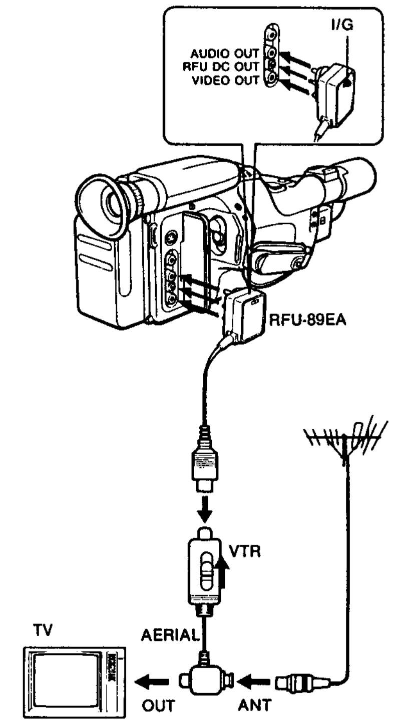
3 **Tune the TV so that picture and sound from the camcorder is received.**

Step 3
Whenever playing back a tape, be sure to set the TV to the 0 position.

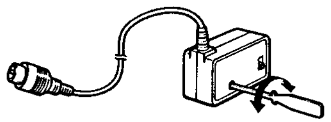
Notes
- In this connection, the sound will be in monaural.
- When you watch a TV programme, turn off the camcorder or disconnect the RFU adaptor from the camcorder.

If your TV is connected to a VTR
(L-4)
Connect the camcorder to the VTR instead of the TV.

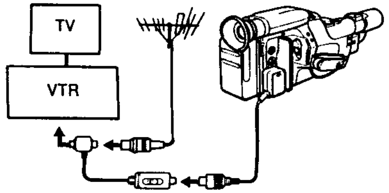
(L-5)



(L-6)



(L-7)



Case 3: Connection to a TV without Video/Audio Input Jacks

For the camcorder supplied with the RFU-89EA RFU adaptor and the aerial selector.
(L-5)

Step 1
Connecting the camcorder, the RFU adaptor, and the TV.

1. **Connect the RFU adaptor to the camcorder.**
2. **Connect the aerial and the aerial selector.**
3. **Set the ANT/VTR selector on the aerial selector to VTR.**
4. **Connect the aerial selector to the TV.**

Step 2
Selection of the TV programme position to monitor the camcorder playback.

1. **Set the I/G selector on the RFU adaptor according to the TV system used in your area.**
2. **Turn on the TV and select a programme position that is not active in your area.**
3. **Set the POWER switch of the camcorder to CAMERA and slide the STANDBY switch up.**
4. **Tune the TV so that the picture and sound from the camcorder is received.**
   (For details, refer to the instruction manual of the TV.)

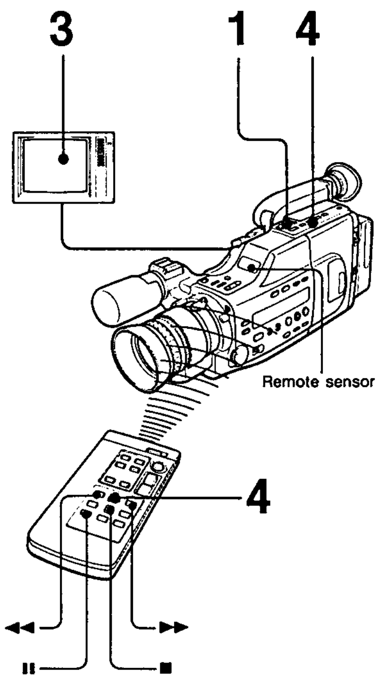
When the playback picture is not free of disturbance

1. **Set the ANT/VTR selector on the aerial selector to ANT.**
2. **Select a programme position between UHF channels 30 and 39, so that the TV shows no picture and a steady rustling sound or no sound is heard.**
3. **Set the ANT/VTR selector on the aerial selector to VTR.**
4. **Turn the screw on the RFU adaptor slowly with the supplied screwdriver so that the playback picture is clearly displayed on the TV screen. (L-6)**

If your TV is connected to a VTR
(L-7)
Connect the camcorder to the VTR instead of the TV.

Note
In this connection, the sound will be in monaural.

(M-1)



Playing Back a Tape

Use the buttons on the camcorder as well as the buttons on the Commander. The Commander is useful when operating the camcorder from a distance. Be sure to select COMMANDER ON in the menu before operation. (See page 59.)

Before You Begin

When you use the AC power adaptor, set the CHARGE/VTR selector to VTR.

Operation

(M-1)

1. **Hold down the green button and slide the POWER switch to PLAYER.**
2. **Insert a cassette.**
3. **Turn on the TV (and the VTR).**
   - For a TV with video/audio input jacks: Set the TV/VIDEO selector to VIDEO.
   - For a TV without video/audio input jacks: Select the programme position for playing back the camcorder.
4. **Press ▷.**
   Playback starts.
   The ▷ on the camcorder can also be used.

To view a still picture
Press ❚❚ during playback.

To resume playback
Press ▷ or ❚❚ again.

To stop playback
Press ■.

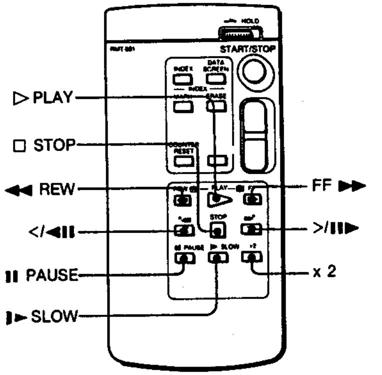
To rewind the tape
Press ◀◀.

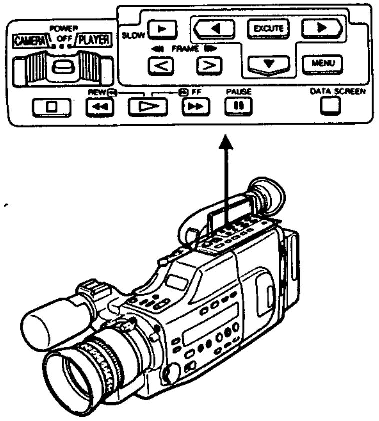
To advance the tape rapidly
Press ▶▶.

After playback
Set the POWER switch on the camcorder to OFF and the CHARGE/VTR selector on the AC power adaptor to STANDBY.

Notes
- When the still picture lasts for 5 minutes or more, the camcorder automatically enters the stop mode.
- This camcorder plays back a tape recorded in the SP and LP mode. The playback mode is automatically switched depending upon the mode of the tape inserted.

(M-2)





Various Playback Modes

(M-2)

To view a still picture (playback pause)
Press II during playback.
II◀ or ▶II appears in the viewfinder.
To resume normal playback, press ▷ or II.

To change the playback direction
Press </◀II for the reverse or II▶/> for the forward direction during playback.
–×1 or ×1 appears in the viewfinder.
To resume normal playback, press ▷.

To view the picture at 1/5 speed (slow playback)
Set the playback direction with </◀II or II▶/>, and then press I▶ during playback.
◀I or I▶ appears in the viewfinder.
When slow playback lasts for 1 minute or more, forward or reverse playback at normal speed starts automatically, according to the tape direction.
To resume normal playback, press ▷.

To view the picture at double speed (Commander only)
Set the playback direction with </◀II or II▶/>, and then press ×2 on the Commander.
–×2 or ×2 appears in the viewfinder.
To resume normal playback, press ▷.

To view the picture frame-by-frame
Press </◀II or II▶/> in the still picture mode. Each press of the button moves the picture one frame. ◀II or II▶ appears in the viewfinder. If you keep pressing </◀II or II▶/>, playback at 1/30 speed starts.
To resume normal playback, press ▷.

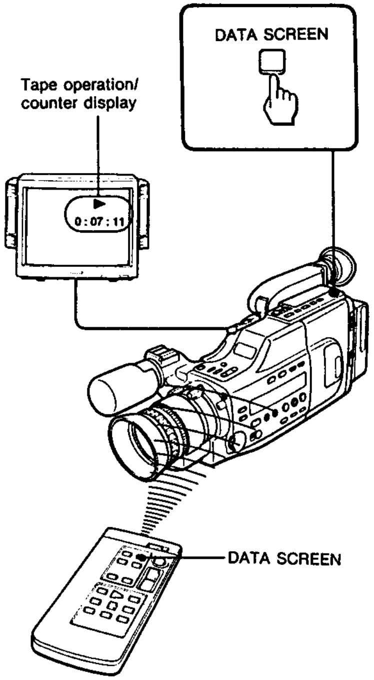
To locate the desired scene — Picture search
Keep pressing ◀◀ or ▶▶ during playback in the still picture mode. ⏪ or ⏩ appears in the viewfinder.
To resume normal playback, release the button.

To locate the desired scene quickly — Skip scan
Press ◀◀ while rewinding or ▶▶ while advancing the tape rapidly. ⏪ or ⏩ appears in the viewfinder.
To resume normal playback, press ▷.

Notes during various playback
- Sound can be heard in the double speed forward playback, but is little noisy.
- Noise may appear in the still picture.
- Streaks may appear when pressing the ◀◀ or ▶▶.
- The colour of the picture may change during still, frame-by-frame, slow or when using the ◀◀ or ▶▶ button.
- The picture may shake vertically when playing back in speeds other than normal speed forward mode.

If picture is noisy during frame-by-frame or slow playback
Adjust the picture referring to "PICTURE ADJUST menu" (page 60) while playing back the tape in slow speed.
However, the noise may not be completely eliminated.

(M-3)



Displaying the Information in the Viewfinder onto the TV Screen

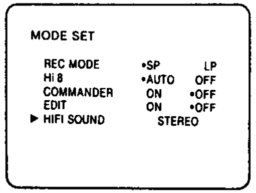
(M-3)

Connect the camcorder and the TV properly and press the DATA SCREEN button.
The indication in the viewfinder is superimposed on the TV screen. This function is convenient to monitor the indications in the viewfinder during menu operations or when the camcorder is remotely operated by the Commander.

To clear the indication
Press the DATA SCREEN button again.

Note
When using the camcorder as a playback VCR during editing, be sure to clear the indications from the TV screen. Otherwise, the indications will be recorded with the picture.

(M-4)



MODE SET

REC MODE •SP LP
Hi 8 •AUTO OFF
COMMANDER ON •OFF
EDIT ON •OFF
▶ HIFI SOUND STEREO

Selecting the Monitor Sound

(M-4)

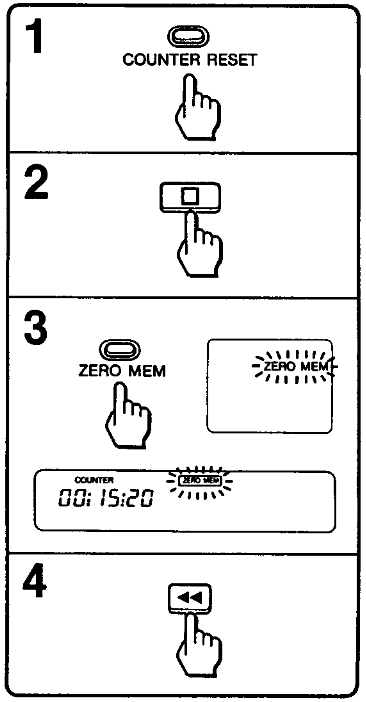
The playback sound can be selected by the menu.
Refer to "Using the Menu during Playback or Editing" (page 59) for details.

When playing back a dual sound recorded tape
Normally set the HIFI SOUND setting to STEREO. When the dual sound recorded tape is played back, select [1] or [2] to hear the desired sound.

Note
Always return the setting to STEREO. Otherwise, the tape recorded in stereo will not be played back properly.

Note on PCM recording and playback
This camcorder cannot perform PCM recording or playback.

(N)



Using the Tape Counter

The counter in the viewfinder and the display window indicates the elapsed time of the recording or playback.

To Index the Entire Tape

Press the COUNTER RESET button at the beginning of the tape so that the counter shows "0:00:00".
Write down the counter reading at a particular point so that you can easily find that point later by referring to the tape counter.

To Return to a Pre-registered Point

(N)

1 **During playback, press the COUNTER RESET button at the point to be located later.**

2 **Press ■ when the playback is finished.**

3 **Press the ZERO MEM button.**
The "ZERO MEM" indication blinks in the viewfinder and the display window.

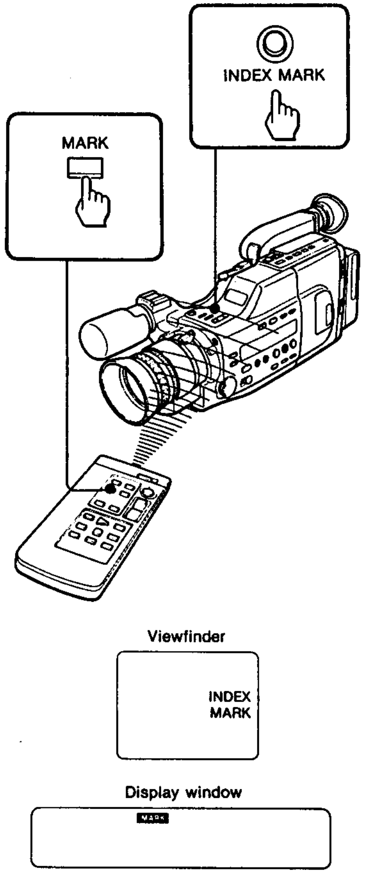
4 **Press ◄◄ or ►►.**
The tape rewinds or advances and stops automatically when the counter reaches approximately "0:00:00".

To cancel the ZERO MEM function
Press the ZERO MEM button.

Notes on the counter and the ZERO MEM button

- The counter reading and the actual point on the tape may not correspond exactly. Use the counter as a guide. There will be a lag of several seconds especially when fast-forward and rewind operation is repeated or when playing back a tape with both the SP mode and LP mode recording.
- Be sure to press the ZERO MEM button after the tape stops. It does not function during playback.
- The ZERO MEM mode is automatically canceled after each operation.

(O-1)


INDEX MARK
MARK
Viewfinder
INDEX
MARK
Display window
MARK

Marking Index Signals during Playback

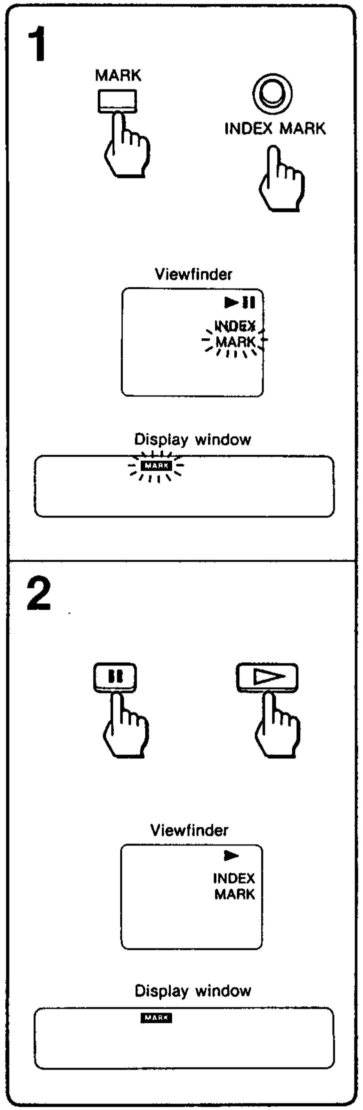
The beginning of the desired program can be located easily be marking an index signal and searching for it later.

To Mark an Index Signal during Playback

(O-1)

Press the INDEX MARK button on the camcorder or the Commander at the point you wish to locate later.
The INDEX MARK indication appears in the viewfinder and MARK appears in the display window to indicate that the index signal has been marked.

(O-2)


1
MARK
INDEX MARK
Viewfinder
►II
INDEX
MARK
Display window
MARK
2
Viewfinder
►
INDEX
MARK
Display window
MARK

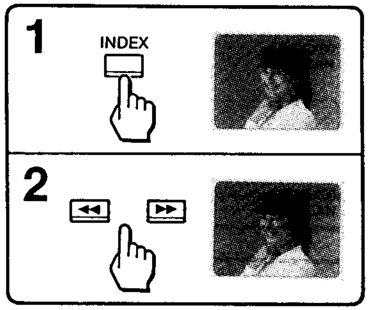
To Mark an Index Signal at the Beginning of the Playback

(O-2)

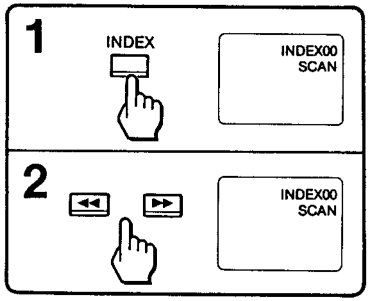
1 **Press the INDEX MARK button on the camcorder or the Commander in the playback pause mode.**
The INDEX MARK indication appears in the viewfinder with MARK blinking and MARK blinks in the dispaly window.

2 **Press II or ▷ to release the playback pause mode.**
The MARK indication stops blinking to indicate that the index signal has been marked.

(O-3)



(O-4)



Scanning or Searching the Beginning of a Program during Playback

To scan the beginning of each program while monitoring the picture — Index scan (1)
(O-3)

1 **Press the INDEX button on the Commander during playback or playback pause mode.**

2 **Press ◀◀ or ▶▶.**
The tape is played back for approximately 10 seconds from the point where the index signal was marked.

3 **Press ▷ when the desired program is displayed to continue playback.**
When no button is pressed, the picture is automatically scanned to the next or previous program.

To scan the beginning of each program in sequence — Index scan (2)
(O-4)

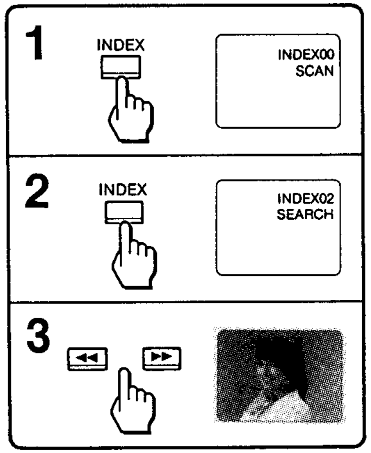
1 **Press the INDEX button on the Commander during stop mode.**

2 **Press the ◀◀ or ▶▶ button.**
The tape is played back for approximately 10 seconds from the point where the index signal is marked.

3 **Press ▷ when the desired program is displayed to continue playback.**
When no button is pressed, the picture is automatically scanned to the next or previous program.

To cancel the index scan mode
Press ▷.

(O-5)



To locate the desired program — Index search

(O-5)

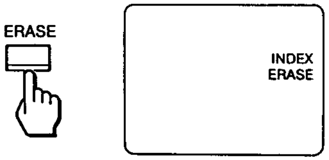
1 **Press the INDEX button on the Commander once during stop or playback mode.**

2 **Press the INDEX button on the Commander until the index number of the desired program is displayed in the viewfinder.**

3 **Press ◀◀ or ▶▶.**
The playback starts from the beginning of the desired program.

To correct the index number
Press ■ and repeat the steps above.

(O-6)



Erasing the Index Signals

(O-6)

1. **Locate the index signal to be erased by index scan or index search.**

2. **Press the INDEX ERASE button on the Commander within approximately 10 seconds while the tape is being played back.**

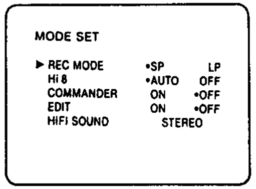
3. **After the index signal is erased, the camcorder returns to index scan or index search, whichever was used in step 1.**

Notes when erasing index signals

- Press the INDEX ERASE button more than 2 seconds after the playback begins in step 2.
- The index signals cannot be erased if the red tab on the cassette is slid out.
- The recorded sound cannot be heard and a black band appears in the bottom of the picture while the index signal is being erased. This will not affect the recorded sound or picture.
- Index signals marked with VTRs such as the EV-S900E series can be detected but cannot be erased with this camcorder.
  Index signals marked with this unit can be detected but cannot be erased with VTRs such as the EV-S900E series.
- Index signal may be erased with VTRs such as the EV-S900E series when PCM after recording is made in the portion where the index signal is marked.

Using the Menu during Playback

(P-1)



MODE SET menu and PICTURE ADJUST menu can be used during playback. In the MODE SET menu, various settings to further enjoy the features of the camcorder can be selected. In the PICTURE ADJUST menu, the picture in the still or slow mode can be adjusted.

MODE SET Menu

(P-1)

COMMANDER ON/OFF

- Select ON when using the supplied Remote Commander for playback.
- Select OFF when the supplied Remote Commander will not be used for playback.

EDIT ON/OFF

- Select ON when performing editing with the camcorder as the playback VTR to keep the degradation of picture resulting from editing to the minimum.
- Select OFF otherwise.

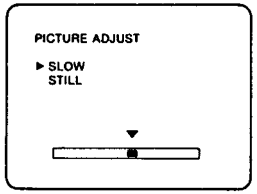
HIFI SOUND STEREO/1/2

- Normally select STEREO. The tape recorded in AFM Hi-Fi stereo will be played back in stereo.
- Select $\boxed{1}$ or $\boxed{2}$ to play back the desired sound of the dual sound recorded tape. See page 51.

Note

You can also select the REC MODE SP/LP and **Hi8** AUTO/OFF settings, though these are used during camera recording.

(P-2)


PICTURE ADJUST
▶ SLOW
STILL

PICTURE ADJUST Menu

(P-2)

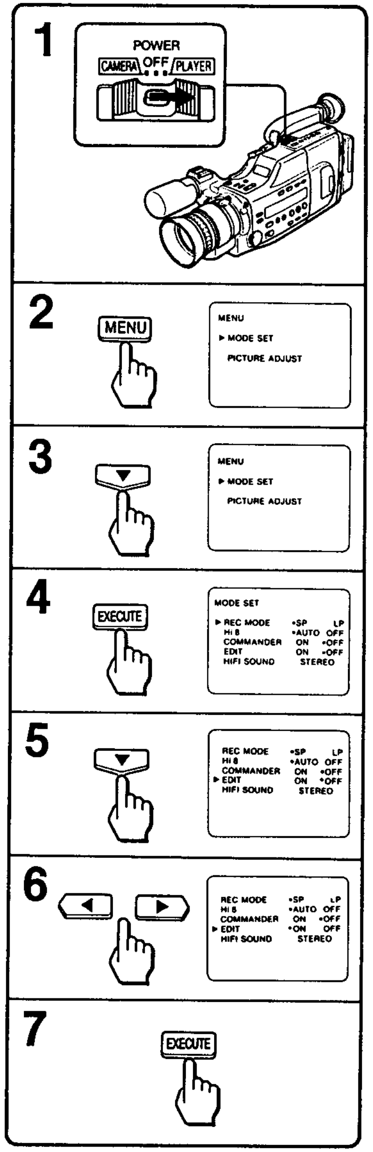
SLOW

Press ◀ or ▶ to clear out the noise bands that may appear on the top or bottom of the picture during slow playback. Adjustable only in the slow playback mode.

STILL

Press ◀ or ▶ so that the vertical shaking of the picture during still mode will stop. Adjustable only in the still mode.

(P-3)


1
POWER
CAMERA OFF PLAYER
2
MENU
MENU
▶ MODE SET
PICTURE ADJUST
3
MENU
▶ MODE SET
PICTURE ADJUST
4
EXECUTE
MODE SET
▶ REC MODE •SP LP
Hi 8 •AUTO OFF
COMMANDER ON •OFF
EDIT ON •OFF
HIFI SOUND STEREO
5
REC MODE •SP LP
Hi 8 •AUTO OFF
COMMANDER ON •OFF
▶ EDIT ON •OFF
HIFI SOUND STEREO
6
REC MODE •SP LP
Hi 8 •AUTO OFF
COMMANDER ON •OFF
▶ EDIT •ON OFF
HIFI SOUND STEREO
7
EXECUTE

How to Call Up the Menu Display

Press the DATA SCREEN button to display the menu on the TV screen.

(P-3)

Example: To select EDIT OFF.

1 **Set the POWER switch to PLAYER and insert a cassette.**

2 **Press the MENU button.**
The MENU display appears.

3 **Press ▼ and move cursor to the desired item.**

4 **Press the EXECUTE button.**
The selected menu appears.

5 **Press ▼ and move cursor to the desired item.**

6 **Press ◀ or ▶ to select the desired setting.**

7 **Press the EXECUTE button.**
The setting is stored in the camcorder and the menu display is cleared.

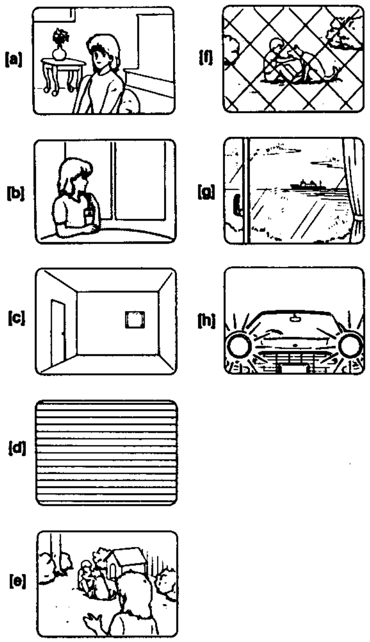
The setting is stored in the memory even if the POWER switch is returned to OFF or the battery pack is removed, as long as the lithium battery is installed.

To display another menu
Start from step 1 in "How to Call Up the Menu Display."

To return to the original screen
Press the MENU button.

To make multiple settings within one menu
After step 6 in "How to Call Up the Menu Display", press ▼ and move cursor to the desired item.

(Q-1)



Manual Focusing

When the AUTO LOCK switch is set to AUTO LOCK, the auto-focusing functions to easily get a in-focused picture under most shooting conditions. But manual focusing is recommended under the following cases:

[a] to [i] corresponds to the illustrations. (Q-1)

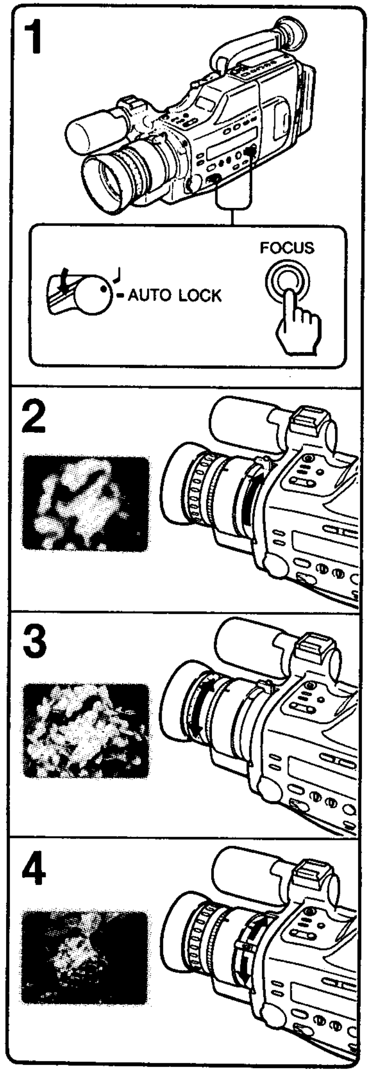
[a] Insufficient light
[b] Strong illumination from behind the object
[c] Objects with little contrast such as a wall, sky, etc.
[d] Finely detailed repetitive patterns, horizontal stripes, diagonal subject
[e] One object is close and the other is at a distance but is in the center
[f] Objects beyond nets, or another object passes just in front of the camcorder
[g] Object beyond frosted glass
[h] Bright object or object reflecting light
[i] Under special shooting conditions:
  - When using conversion lenses or effect filters
  - When shooting close-ups (Macro)
  - When shooting a stationary objects using a tripod
  - To prevent battery wear

Note on automatic focusing
While recording with the auto focusing function, do not touch the focus ring forcibly.

When the auto focusing does not function momentarily
- Shutter speed setting is changed.
- Programmed AE mode is changed.
- Aperture value is changed.
- Gain setting is changed.
- Lighting condition change quickly.
- Zooming from wide to telephoto.
- The camcorder is rapidly panned from a distant subject to a nearby subject with less contrast.
- Shooting fast moving objects.

Some helpful hints
- When shooting relatively dark places, such as indoors, the depth of field in proper focus is very shallow.
- When shooting with auto focusing with the zoom lever set to the wide angle position, the focus ring will be fixed around the 2 m position and may not exactly match the actual object-to-camera distance.
- The figures on the focus ring indicate the distance between the object and the Φ mark on the camcorder.

(Q-2)



Focusing Manually

(Q-2)

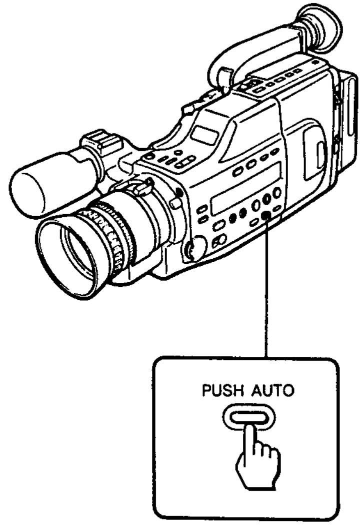
1 **Set the AUTO LOCK switch down and press the FOCUS button.**
Check that the auto focus frame is cleared from the viewfinder.

2 **Turn the manual zoom lever fully to the telephoto position.**

3 **Turn the focus ring to achieve sharp focus.**

4 **Move the zoom lever to set to the desired shot length.**

(Q-3)



Shooting with Auto Focusing Momentarily

(Q-3)

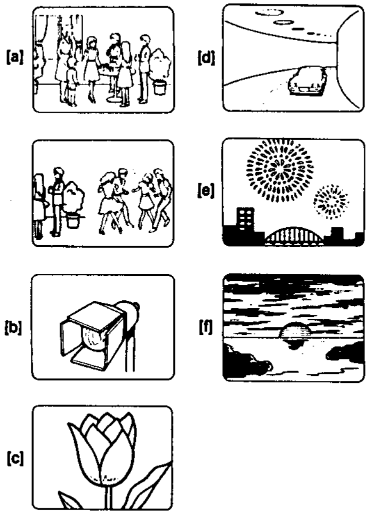
While shooting with manual focusing, press the PUSH AUTO button.
The auto focus functions while you are pressing the PUSH AUTO button.

When the button is released, manual focusing will resume. Use this button when focusing on one object to the other for natural focusing. Shutter speed, white balance, gain, aperture, and/or programmed AE modes will be retained to the previous setting.

When the camcorder focuses on the background during auto focusing
To focus on the subject on the foreground, first shoot the subject on the foreground or set the focus ring to 1.1 m manually. Then set the AUTO LOCK switch to AUTO LOCK or press the PUSH AUTO button.

When the camcorder focuses on the foreground during auto focusing
To focus on the background, first shoot the distant view or set the focus ring to ∞ manually. Then set the AUTO LOCK switch to AUTO LOCK or press the PUSH AUTO button.

(R-1)



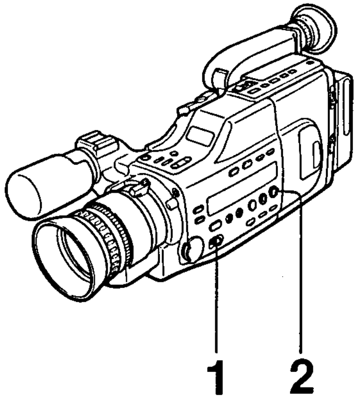
Adjusting the White Balance

In order to record the colour of the object as it is, the common method is to adjust the camcorder to record the white colour as white in various shooting conditions. This is accomplished by adjusting the white balance. When the AUTO LOCK switch is set to AUTO LOCK, the auto white balance functions adjust the white balance under most shooting conditions. But to record the colour of the subject more precisely, without being affected by the colour temperature of the ambient light, adjust the white balance manually.

[a] to [f] corresponds to the illustrations. (R-1)

	Conditions	Indication in the viewfinder
[a]	Lighting conditions change quickly	💡
[b]	Too bright, such as in photograph studios	
[c]	Monochromatic subject or background	▙▟
[d]	Under a sodium lamp	💡
	Under a mercury lamp	
	Under a colour matching fluorescent lamp	☀
[e]	Recording outdoors: a night view, neon signs, or fireworks	
[f]	Recording outdoors: scenes after sunset or before sunrise	

(R-2)



Adjusting the White Balance Manually

(R-2)

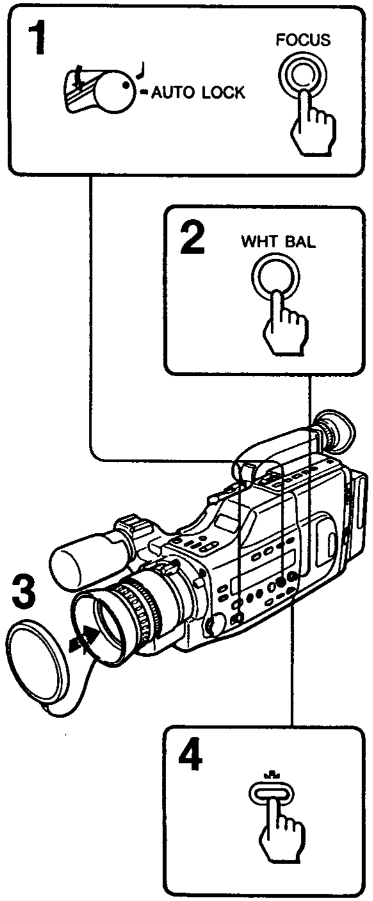
1 **Set the AUTO LOCK switch down.**

2 **Set to the appropriate white balance mode by pressing the WHT BAL button.**
The indication changes in the order below each time the button is pressed.

No indication → ▙▟ → ☀ → 💡
(auto)

Note on manual white balance adjustment
Each time the shooting conditions changes, for example when moving from indoors to outdoors or vice versa, the white balance should be reset to the new lighting condition. First, set the AUTO LOCK switch to AUTO LOCK. Then set it down again for manual white balance adjustment.

(R-3)



Adjusting the White Balance Precisely

(R-3)

The one-push white balance function adjusts the white balance at the press of the button and maintains that condition. When the lighting condition changed or when recording subjects with different colour temperature, use the one push white balance function to achieve recording with natural colours without being affected by the ambient light.

1 **Set the AUTO LOCK switch down and press the FOCUS button.**
The camcorder enters the manual focus mode.

2 **Press the WHT BAL button to call up the ▲ indication.**
The ▲ indication is blinking slowly.

3 **Attach the white lens cap to the camcorder and point the it to a subject (outdoors) or to the light source (indoors).**

4 **Press the ▲ button in the recording standby mode.**
The ▲ indication will blink rapidly.

5 **The ▲ indication stops blinking to indicate that the new white balance is stored in the memory.**
The memory is retained for approximately 1 hour even if the POWER switch is set to OFF or if the battery pack is removed.

When recording under fluorescent light
- Press the WHT BAL button to clear the white balance indication and return to automatic white balance adjustment.
- Use the one push white balance function.
- Set the AUTO LOCK switch to AUTO LOCK.

(R-4)

Colour temperature (K)	Light source
10,000	Clear sky
8,000	
Blue	Slightly overcast
7,000	Cloudy, rainy
6,000	Flourescent lamp (daylight)
5,000	
White	Direct sunlight
	Fluorescent lamp (daylight)
4,000	1 hr. after/before sunrise/sunset
3,500	Fluorescent lamp (off-white)
	Studio lamp
	Halogen lamp
3,200	
3,000	
Yellow	Tungsten lamp
2,500	30 min. after/before sunrise/sunset
Red	
2,000	Sunrise/sunset
	Candlelight

White Balance and Colour Temperature

(R-4)

The colour temperature indicates the relative reddishness or bluishness of light measured in Kelvin degrees (K). It increases as the light source gets bluish and decreases as the light source gets redder. If has no direct relation with brightness of the light. The camcorder automatically adjusts the white balance within the range shown in the diagram on the left.

What the ▲ indication mean
- Slow blinking: white balance not adjusted
- Fast blinking: white balance being adjusted by the ▲ button.
- Stops blinking: white balance adjusted

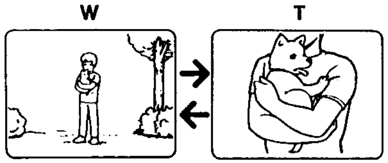
When the ▲ indication does not stop blinking
The white balance cannot be adjusted and the ▲ indication does not stop blinking.
- When the camcorder was pointed to an object that was not white.
- When white balance adjustment was attempted without the white lens cap.

In these cases, point the camcorder to a bright light source or point the camcorder to a white object.

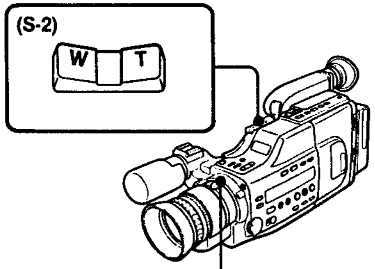
If the ▲ indication still does not stop blinking
- Press the WHT BAL button to clear the white balance indication and return to automatic white balance adjustment.
- Set the AUTO LOCK switch to AUTO LOCK.

When the lighting condition changed
- Readjust the white balance by the ▲ button during the recording standby mode. The ▲ button does not function during recording.
- The white balance adjustment is effected by the setting of the aperture and shutter speed. When the aperture or shutter speed is adjusted manually, and the camcorder was move from indoors to outdoors or vice versa, the white balance setting may not be correct. In this case, set the AUTO LOCK switch to AUTO LOCK again and readjust the white balance automatically.

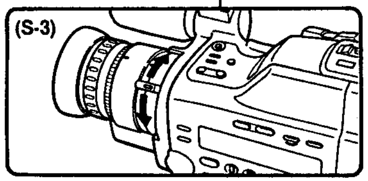
(S-1)



(S-2)



(S-3)



Zooming

(S-1)

The size of the subject in the screen can be changed. Use "zoom-in" for dramatic close-ups and "zoom-out" for panoramic long shots. Also, use zooming during manual focusing. The camcorder's zoom button offers a variable speed zooming; pressing it firmly for high speed zooming and softly for relatively slow zooming.

Power Zooming
— for Smooth and Constant Zooming

(S-2)

Press the T side of the power zoom button for telephoto.
This gives a close up shot of an object far from the lens.

Press the W side of the power zoom button for wide.
This gives a broad view of the scene.

Manual Zooming
— to Create a Dramatic Effect

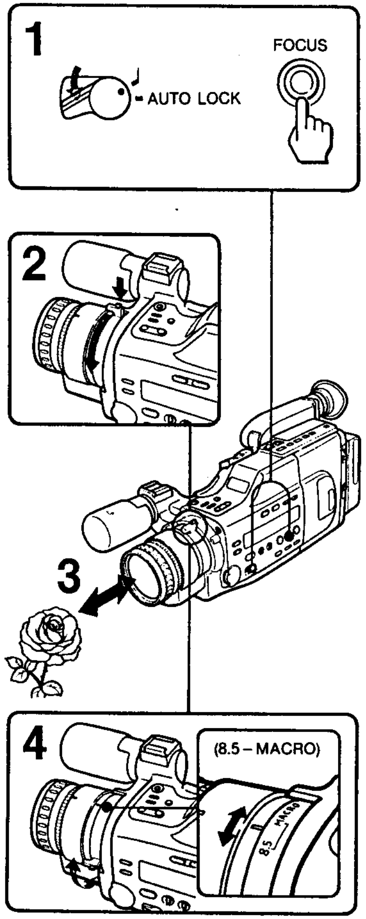
(S-3)

Turn the manual zoom lever upward for telephoto and downward for wide.

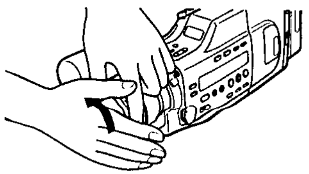
Focal length of this camcorder
The focal length is 8.5 mm to 68 mm. This is approximately 46 mm to 368 mm converted to the focal length of a 35 mm camera.

Using the zoom button on the Commander
Variable speed zoom cannot be operated with the zoom button on the Commander.

(T-1)



(T-2)



Close-ups (Macro)

Tiny objects such as flowers, insects, and images in photographs, can literally fill the screen using the close-up function. It is also useful when recording a title.

(T-1)

1 **Set the AUTO LOCK switch down and press the FOCUS button.**
Check that the auto focus frame is cleared from the viewfinder.

2 **Turn the zoom lever down, while pressing the green macro set button, as far as it will go into the MACRO range.**

3 **Bring the camcorder as close as necessary to the subject to obtain the desired subject size.**
The subject can be as close to the lens surface at approximately 10 mm.

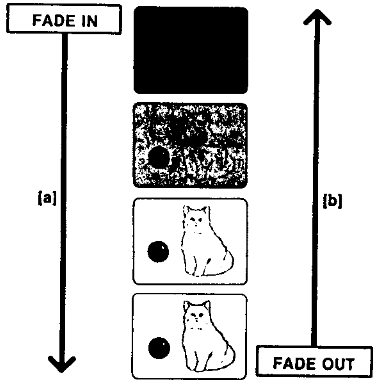
4 **Turn the zoom lever within the MACRO range to focus sharply.**

Notes
- Auto focusing does not function in macro shooting.
- If the object is closer than 10 mm, it cannot not be brought in focus.

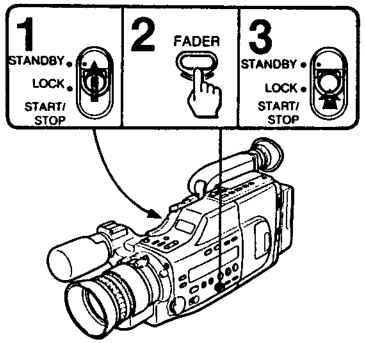
If the lens hood touches the object (T-2)
Remove the lens hood. Hold the focus ring and turn the hood by pressing it with your palm. Do the same when attaching or removing the filter or conversion lens (not supplied).

Recommended accessory
When shooting in macro, the depth of field is very shallow. Pay attention to focusing. To keep the object in focus, use a tripod.

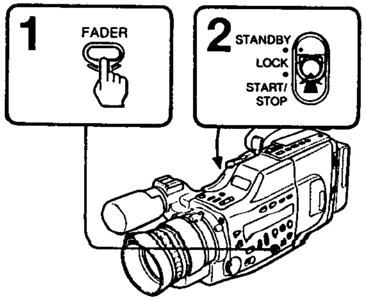
(U-1) (U-2)



(U-3)



(U-4)



Fade-in and Fade-out

When fading-in, the picture will gradually appear from a black screen. The sound will gradually increase in accordance with the picture. **(U-1)**
When fading-out, the picture will gradually disappear into a black screen. The sound will gradually decrease in accordance with the picture. **(U-2)**
Use this function to give a professional effect to your recording.

To Fade-in

(U-3)

1 **Slide the STANDBY switch up.**
The camcorder enters the recording standby mode.

2 **Press the FADER button.**

3 **Press the START/STOP button.**
Fade-in is performed and recording starts.

To Fade-out

(U-4)

1 **Press the FADER button while recording.**

2 **Press the START/STOP button to stop recording.**
Fade-out is performed and then recording stops.

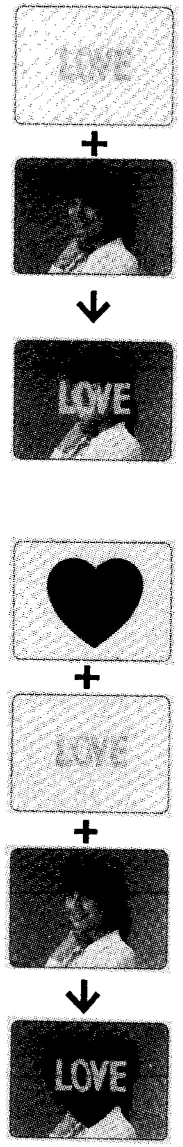
When does the FADER function work
The FADER function works only when the camcorder is in the recording standby mode or recording mode.
It does not function in the stop mode.

To cancel the fade-in/fade-out function before it is preformed
Press FADER before pressing START/STOP.

To use the fade-in/fade-out function repeatedly
Start from step 1 each time.

When the title, date or time is displayed
The title, date or time does not fade-in or fade-out.

(V-1)



Recording a Title

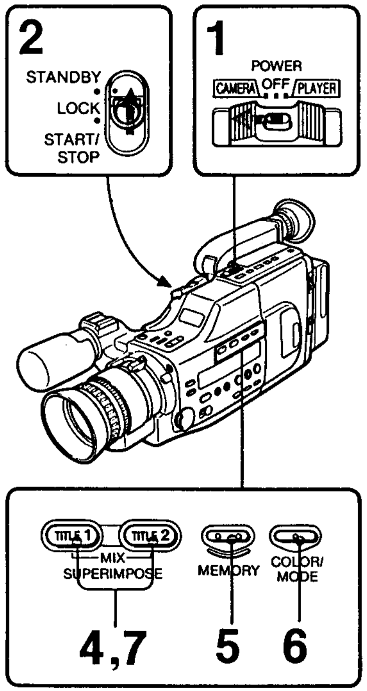
(V-1)
Original hand-lettered message or illustration can be superimposed over the picture. Two titles can be stored and 8 different colors can be used for the titles.

This function can be used during the following situations.

(1) During camera recording.
(2) During playback.
(3) During camera recording, superimpose a title.
Then superimpose different titles during playback.
(4) During editing, use the camcorder as a playback VTR. Titles can be superimposed over the playback picture (with or without a title superimposed) and then recorded together onto the recording VTR.

Before recording or playback, store the desired title in the camcorder.

(V-2)



Storing a Title

(V-2)

Before storing

- Prepare title cards.
  Use a plain, white card and draw titles with in dark colour and thick lines. Street signs and printed materials with high contrast can be used as a title.
- Install the lithium battery (page 27).
  The titles cannot be kept in the memory unless the lithium battery is installed.

Operation

1. **Hold down the green button and slide the POWER switch to CAMERA.**
2. **Slide the STANDBY switch up.**
   The camcorder enters the recording standby mode.
3. **Point the camcorder to the title card and adjust the focus.**
   To focus on the title, use the macro function. (page 71).
4. **Press the TITLE 1 or TITLE 2 button.**
5. **Press the MEMORY button.**
   The title is stored to the button pressed in step 4.
6. **Press the COLOR/MODE button to select the colour of the title.**
   Each time you press the button, the indication changes as follows.

   WHT (white) → BLUE → GRN (green) → CYAN ┐
   ↑ ↓
   BLK (black) ← YEL (yellow) ← VIO (violet) ← RED

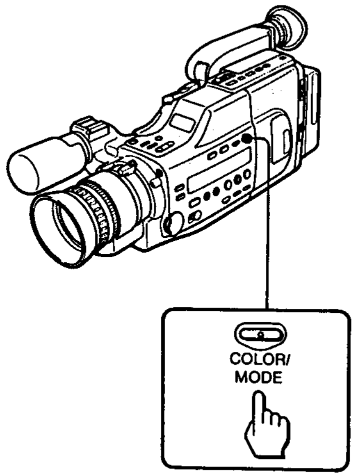
7. **Press the TITLE 1 or TITLE 2 button, whichever was pressed in step 4, to clear the title from the viewfinder.**
   The title is stored to that button until you store another one over it.

To check the title
Press the TITLE 1 or TITLE 2 button, whichever was pressed in step 4, in the standby mode. To clear the title from the viewfinder, press the same button again.

To store a new title
Repeat steps 1 to 7. A new title is stored to the TITLE 1 or TITLE 2 button and the previous title will be deleted from that button.

When storing a title in the memory
When a cassette is installed, the camcorder will return to the power off mode after 5 minutes. Take out the cassette if more than 5 minutes will be needed to store the title.

(V-3)



Function of the COLOR/MODE Button

(V-3)

The COLOR/MODE button works in two ways. When a title is displayed in the viewfinder, the colour of the title can be changed. When the title is not displayed, the title display mode can be changed.

To select the colour

1 **Press the TITLE 1 or TITLE 2 button to display the title.**

2 **Press COLOR/MODE.**
Each time the button is pressed, the colour indication changes as follows.

WHT (white) → BLUE → GRN (green) → CYAN ┐
↑ ↓
BLK (black) ← YEL (yellow) ← VIO (violet) ← RED

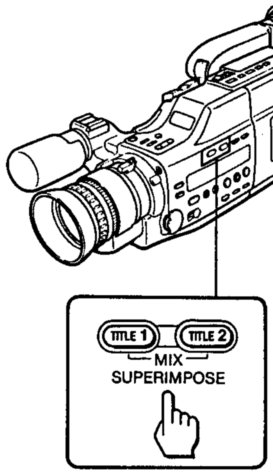
To select the display mode

1 **If the title is displayed, press TITLE 1 or TITLE 2 button to clear the title.**

2 **Press COLOR/MODE.**
Each time the button is pressed, the mode indication changes as follows.

↑: Scroll up the title.
↓: Scroll down the title.
T: Reverse the title.
T↑: Reverse the title and scroll it up.
T↓: Reverse the title and scroll it down.

(V-4)



Superimposing One Title

(V-4)

1 **During playback or recording, press the TITLE 1 or TITLE 2 button at the point from which you want to use the title.**
The title is displayed. During recording the title will be recorded on to the tape. During playback the title will not be recorded on the tape.

2 **Press the same button pressed in step 1 at the point you wish to clear the title.**

When recording the title at the beginning
We recommend the following method:

1 **Set the camcorder in the standby mode.**

2 **Display the title referring to step 1 above.**

3 **Release the standby mode.**

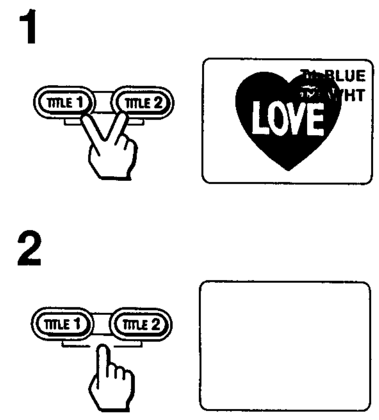
4 **Clear the title referring to step 2 above.**

When recording a title onto the playback picture
The title can be superimposed on the playback picture but cannot be recorded with this camcorder alone. Make connections for editing and record the picture with title superimposed on another VTR. (See page 112).

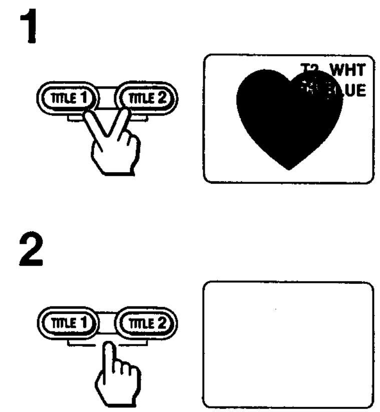
About the colour indication
- The colour indication in the viewfinder is not recorded.
- Even after the title is displayed, the colour can be changed by pressing the COLOR/MODE button.

When displaying the title in the playback mode
The title is cleared if you press ◀◀ or ▶▶, and appears again when normal playback resumes.

(V-5)


1
TITLE 1
TITLE 2
T1 BLUE
T2 WHT
LOVE
2
TITLE 1
TITLE 2

(V-6)


1
TITLE 1
TITLE 2
T2 WHT
T1 BLUE
2
TITLE 1
TITLE 2

Layering One Title over the Other

The title stored in the TITLE 1 button and the TITLE 2 button can be displayed at the same time with one title layered on the other.

Example: When a blue heart is stored in the TITLE 1 button and a white title "LOVE" is stored in the TITLE 2 button.

To display TITLE 1 in the background and TITLE 2 in the foreground
(V-5)

1 **During playback or recording, hold down the TITLE 1 button and press the TITLE 2 button.**

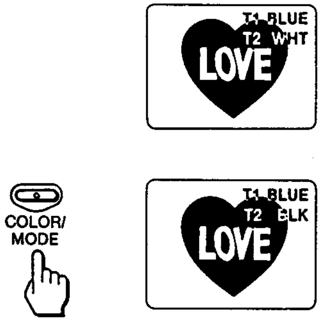
2 **Press the TITLE 1 or TITLE 2 button at the point you wish to clear the title.**

To display TITLE 2 in the background and TITLE 1 in the foreground
(V-6)

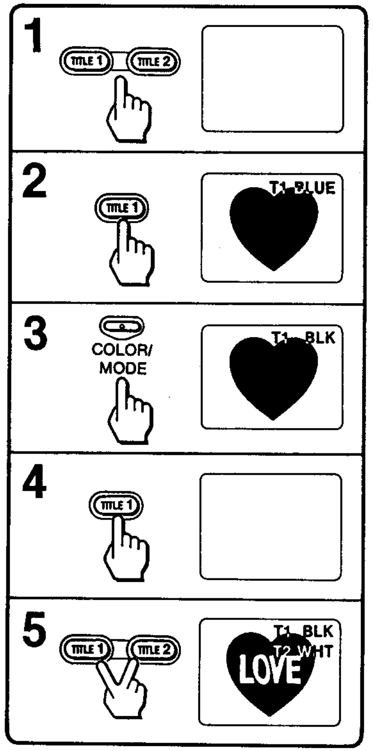
1 **During playback or recording, hold down the TITLE 2 button and press the TITLE 1 button.**
In this case, TITLE 2 "LOVE" is hidden behind TITLE 1 and is not showing. Before using this function, check whether the title stored in the memory is appropriate for this application.

2 **Press the TITLE 1 or TITLE 2 button at the point you wish to clear the title.**

(V-7)


T1 BLUE
T2 WHT
LOVE
COLOR/
MODE
T1 BLUE
T2 BLK
LOVE

(V-8)


1
TITLE 1
TITLE 2
2
TITLE 1
T1 BLUE
3
COLOR/
MODE
T1 BLK
4
TITLE 1
5
TITLE 1
TITLE 2
T1 BLK
T2 WHT
LOVE

To Change the Colour of the Title after Layering One Title over the Other

Example: When a blue heart is stored in the TITLE 1 button and a white title "LOVE" is stored in the TITLE 2 button.

To change the colour of the title in the foreground
(V-7)
Press the COLOR/MODE button.
Each press of COLOR/MODE will change the colour of "LOVE".

To change the colour of the title in the background
(V-8)

1 **Press the TITLE 1 or TITLE 2 button to clear the title.**

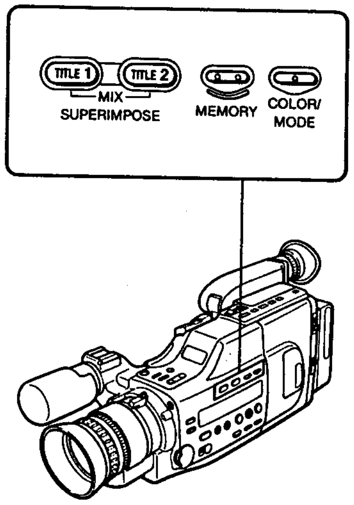
2 **Press the TITLE 1 button.**
TITLE 1, blue heart, is displayed.

3 **Press the COLOR/MODE button to change the colour of TITLE 1.**
The colour of TITLE 1, blue heart, changes.

4 **Press the TITLE 1 button.**
TITLE 1, black heart, is cleared from the picture frame.

5 **Hold down the TITLE 1 button and press the TITLE 2 button.**

(V-9)



Various Title Display Modes

Follow the steps below to enjoy the various title display modes.

(V-9)

Step 1
During camera recording or playback, press the COLOR/MODE button to select the title display modes. Refer to the following page for the available modes.

Step 2
Call up the title.

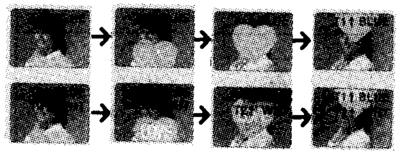
To display one title:
Press the TITLE 1 or TITLE 2 button.
To layer one title over the other:
Call up the title referring to page 78.

Step 3
Clear the title.

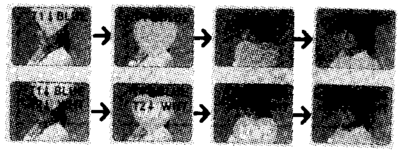
When one title is displayed:
Press the same button pressed in step 2.
When one title is layered over the other:
Press either the TITLE 1 or TITLE 2 button.

(V-10)

(V-11)

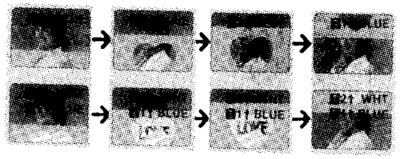


(V-12)

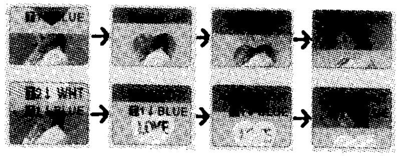


(V-13)

(V-14)



(V-15)



Title display modes
Each press of the COLOR/MODE button in step 1 changes the title display modes in the following order.

- **Normal title display (V-10)**

- **Scrolling up the title (V-11)**
Step 1: The ↑ indication is displayed.
Step 2: The title is scrolled upwards to the center and stops.
Step 3: The title is scrolled up and out of the picture frame.

- **Scrolling down the title (V-12)**
Step 1: The ↓ indication is displayed.
Step 2: The title is scrolled downwards to the center and stops.
Step 3: The title is scrolled down and out of the picture frame.

- **Reversing the title with the picture (V-13)**
Step 1: The T indication is displayed.
Step 2: The reversed title is displayed.
Step 3: The title is cleared from the picture frame.

- **Scrolling up the reversed title (V-14)**
Step 1: The T↑ indication is displayed.
Step 2: The reversed title is scrolled upwards to the center.
Step 3: The reversed title is scrolled up and out of the picture frame.

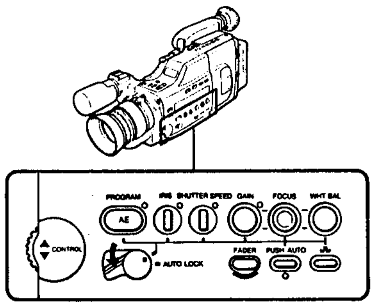
- **Scrolling down the reversed title (V-15)**
Step 1: The T↓ indication is displayed
Step 2: The reversed title is scrolled downwards to the center.
Step 3: The reversed title is scrolled down and out of the picture frame.

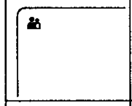
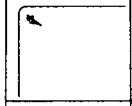
When displaying one title over the other

- TITLE 1 and TITLE 2 cannot be called up in the different title display mode at the same time. For example, calling up TITLE 1 in the reverse mode and TITLE 2 in the scroll up mode at the same is not possible.
- When scrolling the two titles layered, press the second title button before the first title starts to scroll.

Note on scrolling
You can scroll the title only when the camcorder is in the recording standby, recording, or normal playback mode. Only normal title display mode (no indication) and reverse title display mode (🅁) can be performed during modes other than the three above. (Refer to "Various Playback Modes" on page 48.) If you select the scroll mode first, and then set the camcorder to the still picture, slow playback, or double speed playback, the scroll mode will be canceled automatically.

(W-1)



Viewfinder	Display window
(W-2) 	
(W-3) 	
(W-4) Example AE A 500 ▶ F8	Example A 500
(W-5) Example AE S ▶ 500 F8	Example S 500
(W-6) Example 250 ▶ F4 0 dB	Example 250

Recording a Picture Using Programmed AE and Manual Modes

(W-1)

A variety of camera recording modes can be selected for this camcorder, from the full automatic mode to the programmed AE mode in which camera recording modes most suited for the subject and/or the condition is adjusted automatically. In addition, the manual mode enables independent setting of the aperture value, shutter speeds, and gain. Setting of a single parameter or a combination of two or three parameters at one time is possible.

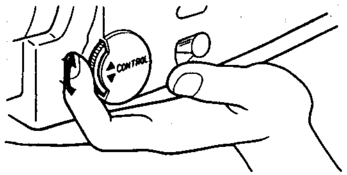
Camera Recording Modes Available

With the AUTO LOCK switch set down, each press of the PROGRAM AE button changes the camera recording mode as follows.

→ Portrait	(W-2)
↓	
Sports	(W-3)
↓	
Aperture priority	(W-4)
↓	
Shutter priority	(W-5)
↓	
Manual	(W-6) The selected parameters are displayed

During programmed AE and manual modes
Focus and white balance can be adjusted independently from the programmed AE mode or the manual mode. Manual adjustment of focus and white balance is recommended.

(W-7)

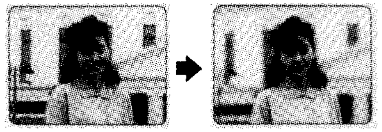


How to use the CONTROL dial (W-7)
Move the dial slowly using the tip of your index finger. If the dial is released immediately after holding it to the maximum position, the sound of the dial returning to the normal position may be recorded.

When recording in the aperture priority mode or the manual mode
Do not point the lens at the sun or other light sources when the aperture value is set to F1.4.

Portrait Mode

(X-1)

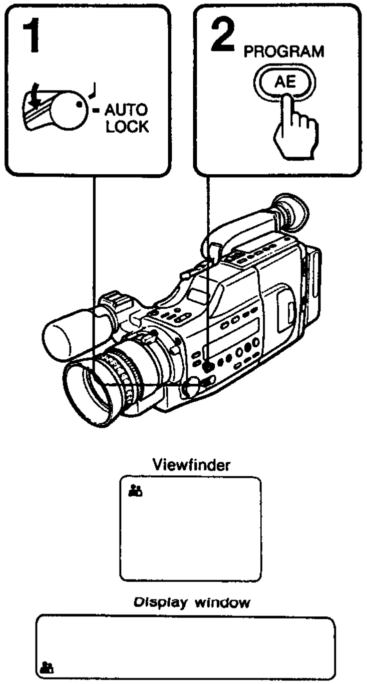


(X-1)
In the portrait mode, the subject is in focus and the background is out of focus. The aperture (opening of the iris) and the shutter speed is automatically adjusted to maintain the appropriate exposure according to the size and brightness of the subject. The portrait mode is most effective when used outdoors.

Portrait Mode Applications

- To shoot a subject with not much movement, such as a portrait of a person or a close up of a flower.
- To zoom in a subject with the telephoto mode.
- To shoot a subject with an obstruction in the foreground.

(X-2)



Operation

(X-2)

1 **Set the AUTO LOCK switch down.**

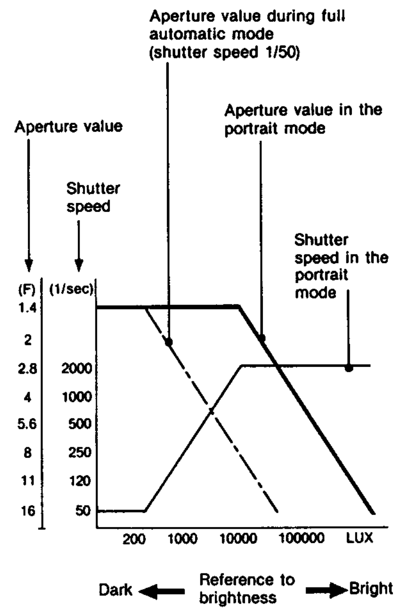
2 **Press the PROGRAM AE button until the 👤 indication is displayed in the viewfinder and the display window.**
The camcorder enters the portrait mode.

To return to the full automatic mode
Set the AUTO LOCK switch to AUTO LOCK.

To enter other programmed AE modes from the portrait mode
Press the PROGRAM AE button to display the desired programmed AE mode.

When recording in the portrait mode
Focus and white balance can be adjusted manually. See page 64 (focus) and page 67 (white balance) for details.

(X-3)



Hint for effective camera work

Use of the portrait mode with the following method will gradually make the background out of focus while keeping the subject in focus.

1 **Enter the portrait mode referring to page 85.**

2 **Set the AUTO LOCK switch to AUTO LOCK and start recording.**

3 **Set the AUTO LOCK switch down.**
The camcorder will enter the portrait mode and make the background out of focus.

The theory of the portrait mode
(X-3)

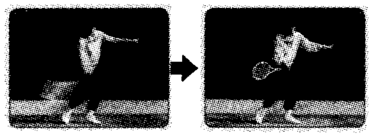
When shooting outdoors under bright sunlight in the full automatic mode, the aperture tends to close and both the subject and the background comes into focus (deep depth of field). This is a result of excessive light. In order to bring the subject in focus and keep the background out of focus (shallow depth of field), the aperture should be opened. In the portrait mode, the aperture is controlled to open by automatically selecting the shutter speed (between 1/50 to 1/2000 that matches the shooting situation) to maintain the appropriate exposure.

When recording under fluorescent, sodium, or mercury lamps

- The brightness of the recorded picture may flicker.
- The colour of the recorded picture may vary.

Sports Mode

(Y-1)



(Y-1)

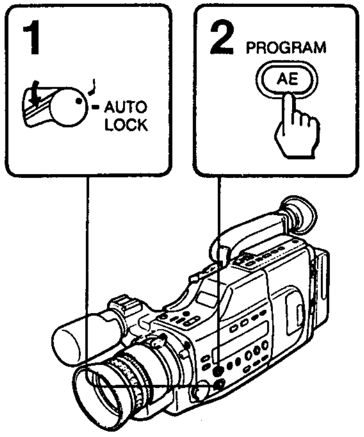
By recording in the sports mode, a subject moving at high speed can be recorded and the picture can be observed more clearly with less picture shaking in the still or slow mode compared to the full automatic mode. The shutter speed and the aperture is automatically adjusted to maintain the appropriate exposure according to the speed of the subject.

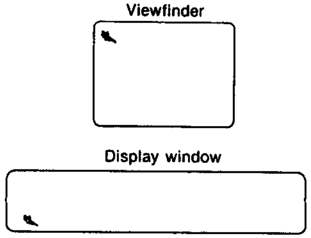
Sports Mode Applications

- To shoot outdoor sports scenes, such as football, tennis, and golf.
- To shoot the scenery from inside a moving automobile.

Operation

(Y-2)





(Y-2)

1 **Set the AUTO LOCK switch down.**

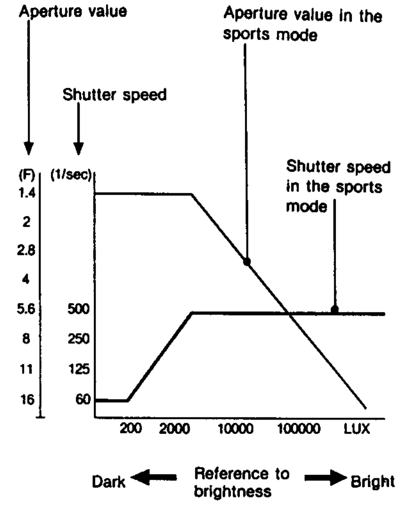
2 **Press the PROGRAM AE button until the 🏃 indication is displayed in the viewfinder and the display window.**
The camcorder enters the sports mode.

To return to the full automatic mode
Set the AUTO LOCK switch to AUTO LOCK.

To enter other programmed AE modes from the sports mode
Press the PROGRAM AE button to display the desired programmed AE mode.

When recording in the sports mode
Focus and white balance can be adjusted manually. See page 64 (focus) and page 67 (white balance) for details.

(Y-3)



Hint for effective camera work

When shooting athletic matches from a distance, such as a football game, we tend to zoom from the wide to the telephoto position to catch the once-only events. Even under these circumstances, by using the sports mode, a sharp picture without camera wobble can be obtained when played back later in the slow or still mode.

The theory of the sports mode
(Y-3)

When the shutter speed is shifted to a faster speed, subjects moving at high speed, such as a tennis racket or golf club, can be recorded and then played back clearly with less picture shaking compared to the full automatic mode. With this camcorder, the shutter speed can also be set independently from the aperture. However, the picture may become dark when the lighting condition is insufficient. In the sports mode, the fastest shutter speed that matches the shooting situation (between 1/50 and 1/500) is selected to maintain the appropriate exposure.

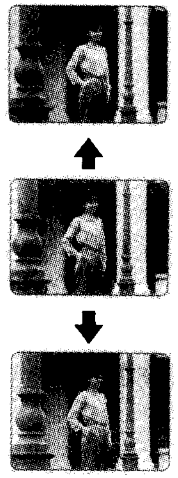
Note

- The sports mode is effective under sufficient lighting, such as under sunlight. When used under extremely dark conditions, the shutter speed may not be shifted to high speeds.

When recording under fluorescent, sodium, or mercury lamps

- The brightness of the recorded picture may flicker.
- The colour of the recorded picture may vary.

(Z-1)



Aperture Priority Mode

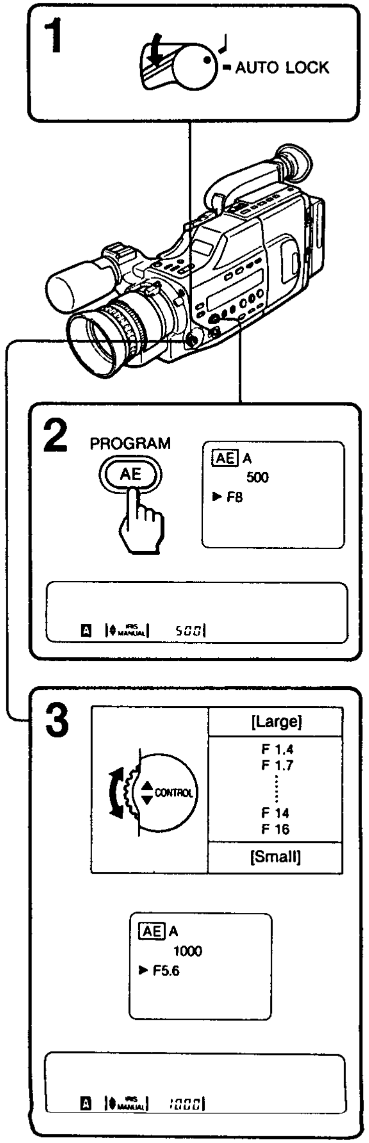
(Z-1)

The aperture priority mode enables to select the aperture which determines the depth of field. 15 aperture values, from F 1.4 to F16, can be selected. The shutter speed is automatically set (between 1/50 to 1/2000) in combination with the aperture value to maintain the appropriate exposure.

Aperture Priority Application

To shoot the picture with different depths of field.

(Z-2)



(Z-2)

1 Set the AUTO LOCK switch down.

2 Press the PROGRAM AE button until the AE A indication is displayed in the viewfinder and the display window.
The camcorder enters the aperture priority mode.

3 Move the CONTROL dial to set to the desired aperture value.
The selectable aperture values are:
F1.4, F1.7, F2, F2.4, F2.8, F3.4, F4, F4.8, F5.6, F6.8, F8, F9.6, F11, F14, F16

The shutter speed indication corresponds to the change of the aperture value.

To return to the full automatic mode
Set the AUTO LOCK switch to AUTO LOCK.

To enter other programmed AE modes from the aperture priority mode
Press the PROGRAM AE button to display the desired programmed AE mode.

When recording in the aperture priority mode
Focus and white balance can be adjusted manually.
See page 64 (focus) and page 67 (white balance) for details.

Hints for effective camera work

- **Understanding the depth of field**
The depth of field is the area in which the objects are in focus. A shallow depth of field shows the subject in focus and the background out of focus. The greatest depth of field shows everything in focus.

- **Depth of field and aperture value**
A large aperture provides a shallow depth of field and a small aperture provides a deep depth of field.

- **Depth of field and object-to-camera distance**
When the object-to-camera distance is near, the depth of field will be shallow. When the object-to-camera distance is far, the depth of field will be great.

- **Depth of field and zooming**
The depth of field will be shallow in the telephoto position. The depth of field will be great in the wide position.

- **Summary**

	A shallow depth-of-field	A deep depth-of-field
Aperture	Towards open	Towards closed
Object-to-camera distance	Near	Far
Zoom	Telephoto	Wide

When the ▶ indication in the viewfinder is blinking
The lighting condition is insufficient or excessive for the aperture priority mode. In this case, move the CONTROL dial and reset the aperture.

- **Insufficient light (when the picture inside the viewfinder is dark)**
  Decrease the aperture.
- **Excessive light (when the picture inside the viewfinder is too bright)**
  Increase the aperture.

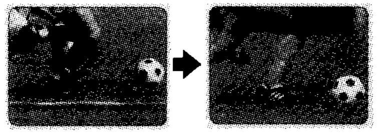
Although we recommend camera recording without the ▶ indication blinking, camera recording can be performed even when the ▶ indication is blinking. Check the picture in the viewfinder before recording.

When recording under fluorescent, sodium, or mercury lamps

- The brightness of the recorded picture may flicker.
- The colour of the recorded picture may vary.

Shutter Priority Mode

(a-1)



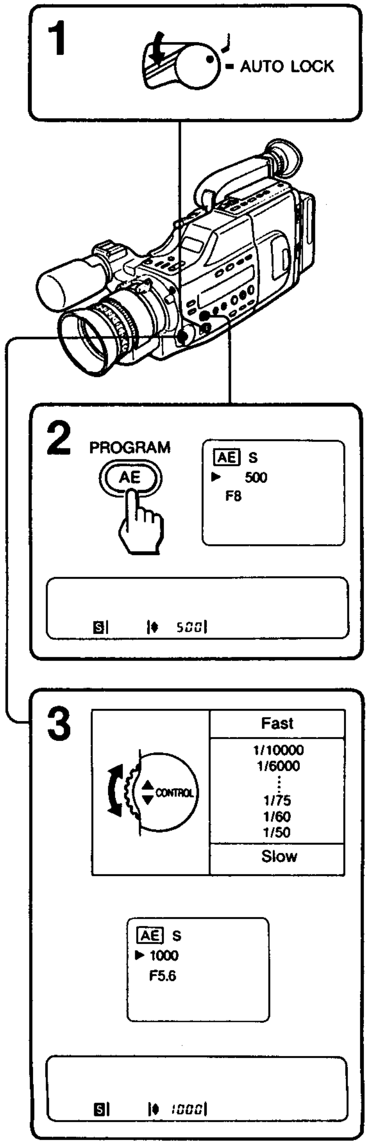
(a-1)

The shutter priority mode enables selection of the shutter speed. 28 shutter speeds can be selected from 1/50 (normal speed) to 1/10000. When a fast shutter speed is selected, subjects moving at high speed can be recorded and the picture can be observed more clearly with less picture shaking in the still or slow modes compared to slower shutter speeds. The aperture value is automatically set (between F1.4 to F16) in combination with the shutter speed to maintain the appropriate exposure.

Shutter Priority Applications

- To shoot a golf swing or a tennis match with the tennis ball captured clearly.
- When you wish playback certain scenes with high speed movements in a clear, sharp picture.

(a-2)



Operation

(a-2)

1 **Set the AUTO LOCK switch down.**

2 **Press the PROGRAM AE button until the AE S indication is displayed in the viewfinder and the display window.**
The camcorder enters the shutter priority mode.

3 **Move the CONTROL dial to set to the desired shutter speed.**
The selectable shutter speeds are:
1/50, 1/60, 1/75, 1/90, 1/100, 1/120, 1/150, 1/180, 1/215, 1/250, 1/300, 1/350, 1/425, 1/500, 1/600, 1/725, 1/850, 1/1000, 1/1250, 1/1500, 1/1750, 1/2000, 1/2500, 1/3000, 1/3500, 1/4000, 1/6000, 1/10000

The aperture value indication corresponds to the change of the shutter speed.

To return to the full automatic mode
Set the AUTO LOCK switch to AUTO LOCK.

To enter other programmed AE modes from the shutter priority mode
Press the PROGRAM AE button to display the desired programmed AE mode.

When recording in the shutter priority mode
Focus and white balance can be adjusted manually. See page 64 (focus) and page 67 (white balance) for details.

Hints for effective camera work
Refer to the chart below for the appropriate shutter speed for the object. Check the brightness of the picture in the viewfinder.

When to use	Recommended speed
• On clear days, recording golf or tennis scenes. (To view the hit ball clearly in the slow or still mode, select shutter speeds between 1/1000 to 1/4000) • Recording the skiers.	1/10000 to 1/600
• On overcast days, recording a moving merry-go-round or a roller coaster. • Recording outdoors stably from inside a moving automobile. • General athletic scenes, marathon, etc.	1/500 to 1/150
• Used in place of the ND2 filter to reduce the exposure to approximately 1/2. • Recording indoors for stable recording.	1/120
• Recording under bright sunlight. To avoid out-of-focus pictures while recording with small aperture.	1/100 to 1/60

When the ▶ indication in the viewfinder is blinking
The lighting condition is insufficient or excessive for the shutter priority mode. In this case, move the CONTROL dial and reset the shutter speed.

Although we recommend camera recording without the ▶ indication blinking, camera recording can be performed even if the ▶ indication is blinking.
In this case, check the picture in the viewfinder before recording.

When is shutter speed 1/50 indicated?
1/50 indication is displayed only when the shutter speed is set to 1/50 using the CONTROL dial. Even though the shutter speed is set to 1/50 during the full automatic mode, the indication will not be displayed.

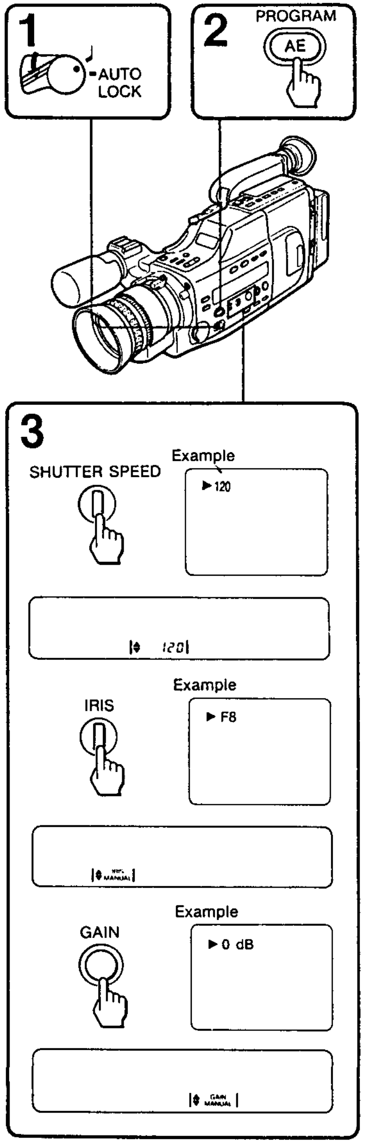
When the shutter speed is set 1/250 or faster
Try to shoot under sunlight outdoors, and with the video light indoors.

When shooting a very bright object
A vertical band (smear) may appear on the screen if shot at high speeds.

When the shutter speed is changed when shooting a TV screen
The brightness of the recorded picture may vary.

When recording under fluorescent, sodium, or mercury lamps
- The brightness of the recorded picture may flicker.
- The colour of the recorded picture may vary.

(b-1)



Manual Mode

In the manual mode, independent setting of the aperture value, shutter speeds, and gain can be performed. Setting of a single parameter or a combination of two or three parameters at one time is possible.

Setting One Parameter

(b-1)

1 **Set the AUTO LOCK switch down.**

2 **Press the PROGRAM AE button until nothing is indicated in the upper left hand corner of the viewfinder.**
The camcorder enters the manual mode.

At this point, the shutter speed is set to 1/50, the aperture and gain are automatically adjusted to the shooting condition.

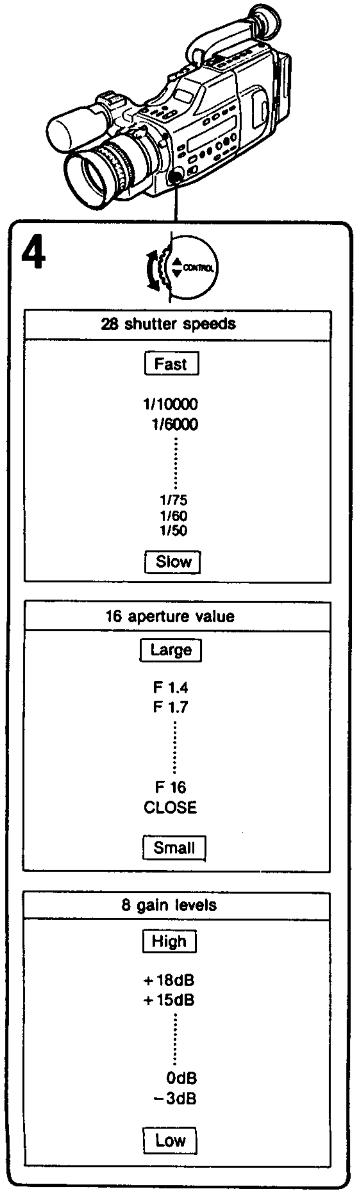
3 **Press the button of the parameter to be set.**

To set the shutter speed
The first press of the SHUTTER SPEED button sets the shutter speed to 1/120 speed and the second press sets it to 1/1000. To set to other speeds, go to step 4.

To set the aperture value
Press the IRIS button. The aperture is set to the value at the instant the button was pressed.

To set the gain
Press the GAIN button. The gain is set to the level at the instant the button was pressed.

Continued on the next page



4 **Select the desired setting by the CONTROL dial.**

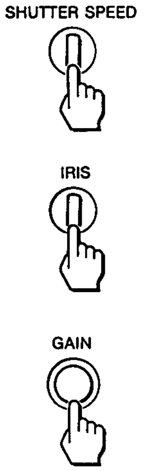
The indication in the viewfinder changes as shown in the illustration and below.

Selectable shutter speeds
1/50, 1/60, 1/75, 1/90, 1/100, 1/120, 1/150, 1/180, 1/215, 1/250, 1/300, 1/350, 1/425, 1/500, 1/600, 1/725, 1/850, 1/1000, 1/1250, 1/1500, 1/1750, 1/2000, 1/2500, 1/3000, 1/3500, 1/4000, 1/6000, and 1/10000

Selectable aperture value
F1.4, F1.7, F2, F2.4, F2.8, F3.4, F4, F4.8, F5.6, F6.8, F8, F9.6, F11, F14, F16, and CLOSE

Selectable gain level
−3 dB, 0 dB, +3 dB, +6 dB, +9 dB, +12 dB, +15 dB, and +18 dB

(b-2)



To return to the full automatic mode
Set the AUTO LOCK switch to AUTO LOCK.

To enter other programmed AE modes from the manual mode
Press the PROGRAM AE button to display the desired programmed AE mode.

When recording in the manual mode
Focus and white balance can be adjusted manually. See page 64 (focus) and page 67 (white balance) for details

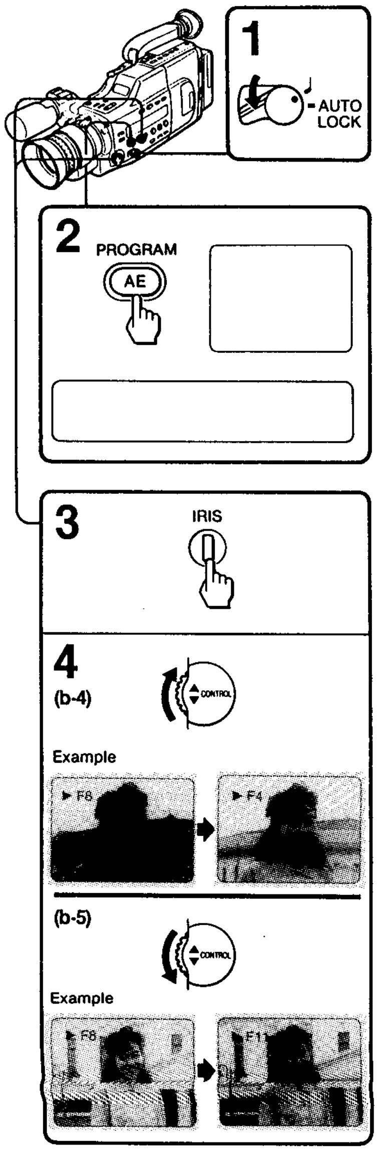
The buttons pressed and the indication in the viewfinder
(b-2)
- **When the SHUTTER SPEED button is pressed**

The first press of this button sets the camcorder to the 1/120 shutter speed. The second press sets the camcorder to the 1/1000 shutter speed. For a quick access to the desired shutter speed, first press the button and set to the shutter speed whichever is closer to the desired speed and then turn the CONTROL dial.
- **When the IRIS button is pressed**

The camcorder indicates the aperture value that was last detected when the camcorder was controlling the aperture automatically. At the same moment, though there is no indication, the gain level will be locked to match the aperture above to maintain the appropriate aperture.
- **When the GAIN button is pressed**

The camcorder indicates the gain level that was last detected when the camcorder was controlling the gain level automatically.
If aperture value was set first, the gain level to match that aperture value to maintain the appropriate exposure will be indicated in the viewfinder.

(b-3)



Aperture Control Applications

(b-3)

Adjust the exposure when there is an extreme difference in the brightness between the subject and the background.

1 **Set the AUTO LOCK switch down.**

2 **Press the PROGRAM AE button until nothing is indicated in the upper left hand corner of the viewfinder.**
The camcorder enters the manual mode.

At this point, the shutter speed is set to 1/50, the aperture and gain are automatically adjusted to the shooting condition.

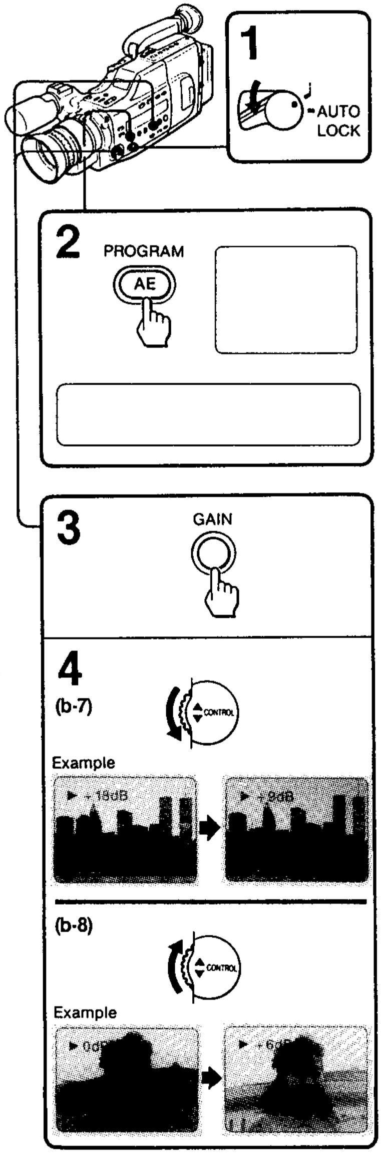
3 **Press the IRIS button.**

4 **Move the CONTROL dial to set the aperture to the appropriate value.**

Illumination from behind the subject and opposite the camera (Back light)
(b-4)
Move the CONTROL dial up to decrease the aperture value.

Illumination too strong
(b-5)
Move the CONTROL dial down to increase the aperture value.

(b-6)



Gain Level Control Applications

(b-6)

This camcorder automatically raises the gain level to capture the subject clearly when the shooting condition is dark. Due to this function, the recorded picture may seem brighter than the actual shooting condition. In these cases, set the gain level to reproduce the actual atmosphere. The gain level control can also be applied to adjusting the picture under back light condition without changing the depth of field.

1 **Set the AUTO LOCK switch down.**

2 **Press the PROGRAM AE button until nothing is indicated in the upper left hand corner of the viewfinder.**
The camcorder enters the manual mode.

At this point, the shutter speed is set to 1/50, the aperture and gain are automatically adjusted to the shooting condition.

3 **Press the GAIN button.**

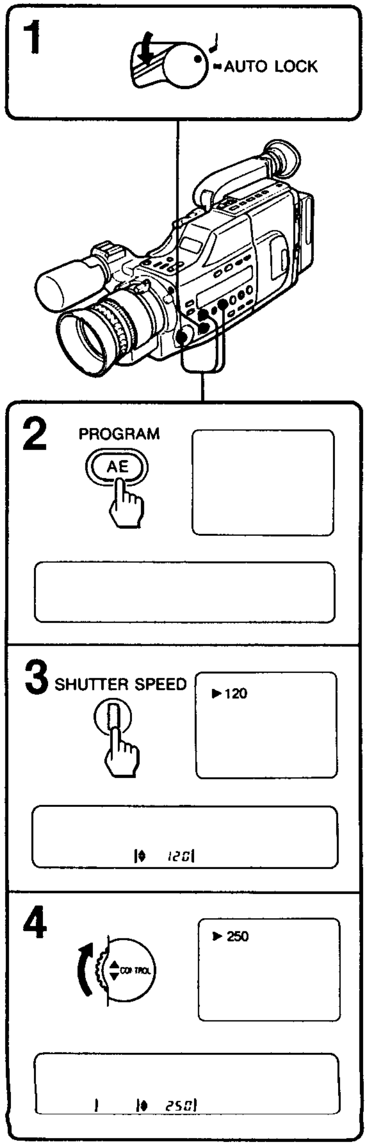
4 **Move the CONTROL dial to set the gain to the appropriate level.**

Shooting the picture in the dark effectively
(b-7)
Move the CONTROL dial down to lower the gain level.

Illumination from behind the subject and opposite the camera (Back light)
(b-8)
Move the CONTROL dial up to raise the gain level.

When the gain level is too high
The picture may become distorted.

(b-9)


1
AUTO LOCK
2
PROGRAM
AE
3
SHUTTER SPEED
▶120
120
4
CONTROL
▶250
250

Setting Multiple Parameters

(b-9)

Example: To set the shutter speed to 1/250, aperture value to F4, and gain level to +6dB.

1 **Set the AUTO LOCK switch down.**

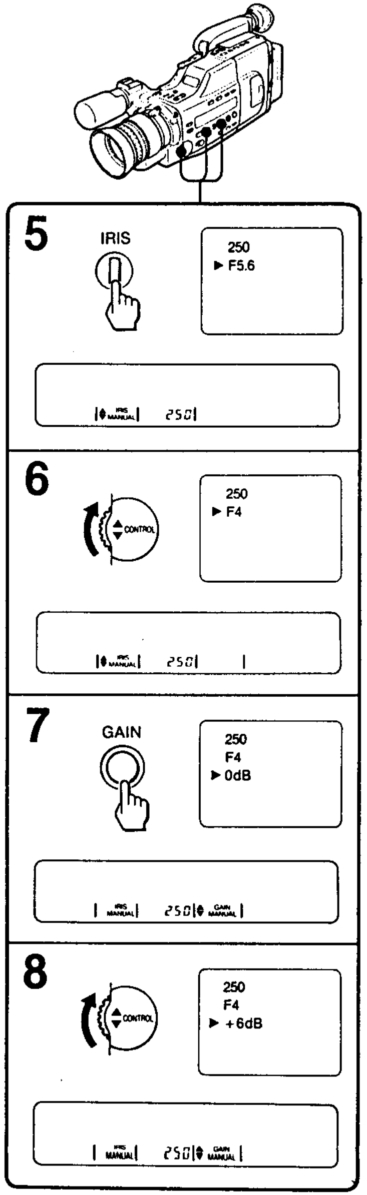
2 **Press the PROGRAM AE button until nothing is indicated in the upper left hand corner of the viewfinder.**
The camcorder enters the manual mode.

At this point, the shutter speed is set to 1/50, the aperture and gain are automatically adjusted to the shooting condition.

3 **Press the SHUTTER SPEED button.**

4 **Move the CONTROL dial and set the shutter speed to 250.**

Continued on the next page


5
IRIS
250
▶F5.6
IRIS MANUAL
250
6
CONTROL
250
▶F4
IRIS MANUAL
250
7
GAIN
250
F4
▶0dB
IRIS MANUAL
250
GAIN MANUAL
8
CONTROL
250
F4
▶ +6dB
IRIS MANUAL
250
GAIN MANUAL

5 **Press the IRIS button.**

6 **Move the CONTROL dial and set the aperture value to F4.**

7 **Press the GAIN button.**

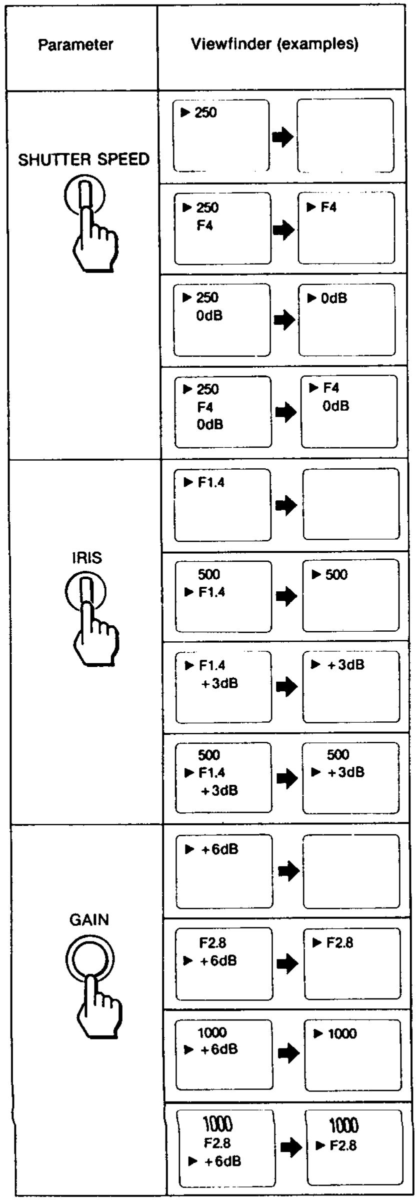
8 **Move the CONTROL dial and set the gain level to +6dB.**

Camera recording will be performed under this setting even when the shooting condition changes.

To return to the full automatic mode
Set the AUTO LOCK switch to AUTO LOCK.

What parameter to set first
Setting can be performed from any parameter. Press the button of the desired parameter. The indication when the button is pressed is the same as those explained in page 99.

(b-10)



To change the setting

- **Parameter with the ▶ indication:**
  Move the CONTROL dial to change the setting.
- **Parameter without the ▶ indication:**

1 **Press the button of the desired parameter to move the ▶ indication to that parameter.**

2 **Then move the CONTROL dial to change the setting.**

To quit the setting
(b-10)
Parameter with the ▶ indication:
Press the button of that parameter to erase the indication from the viewfinder.
Parameter without the ▶ indication:

1 **Press the button of the parameter to be erased to move the ▶ indication to that parameter.**

2 **Then press the same button to erase that parameter from the viewfinder.**

When the parameter is erased
The adjustment of that parameter will be as follows.

- Shutter speed: Locked to 1/50.
- Aperture value: Automatic adjustment
- Gain level: Automatic adjustment. However, when the aperture value is in the viewfinder (i.e. locked to a certain value), gain will be set to the corresponding level to maintain the appropriate exposure.

(b-11)

	Aperture value	Shutter speed	Gain level
Selectable steps	16 steps	28 steps	8 steps
Variation of exposure (in terms of EV steps)	0.5 EV steps	0.25 EV steps 0.5 EV steps*	0.5 EV steps
Towards bright (+ EV)	F1.4	1/50	+18 dB
↕	↕	↕	↕
Towards dark (− EV)	F16	1/10000	−3 dB

*For shutter speeds between 1/4000 and 1/10000.

Advanced Application of the Manual Mode

The manual adjustment function offers an advanced video camera recording technique by controlling the exposure with the balance of shutter speed, aperture value and gain level.

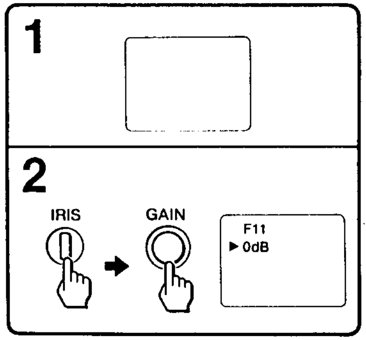
Understanding the relation between aperture value, shutter speed, and gain
Exposure is measured in the units of Exposure value (EV). In this camcorder, the total EV can be varied or kept at a constant level by controlling the balance of the parameters.

Refer to the chart on the left **(b-11)** for an overview of the relation between aperture value, shutter speed, and gain of this camcorder.

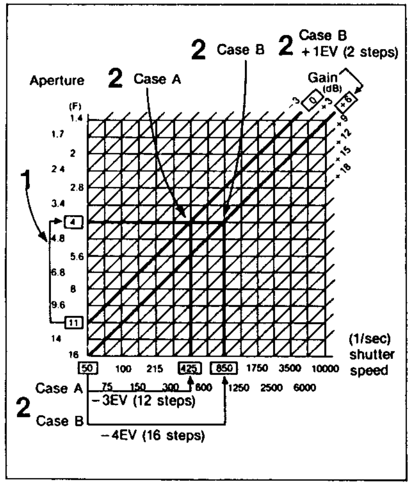
The relation between exposure and the aperture, shutter speed, and gain can be concluded as:

EV (Exposure value) = Aperture control + Shutter speed control + Gain control

(b-12)



(b-13)



Example: To change the setting without changing the exposure
(b-12)

1 **Set the camcorder to the manual mode referring to page 102.**

2 **Press the IRIS and GAIN buttons.**
At this point, the shutter speed is set to 1/50, the aperture and gain is set to the shooting condition. Let's suppose the aperture value is F11 and the gain level is 0 dB.

The setting at this point becomes the basic reference to perform the following setting.

Let's set the exposure at this point at 0 EV.

0 EV = Aperture control + Shutter speed control + Gain control

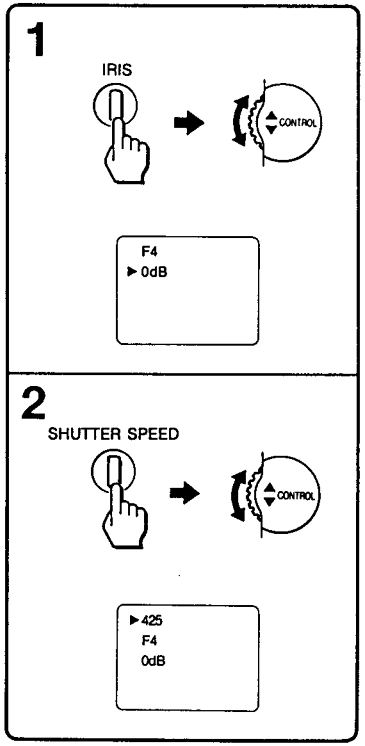
In order to maintain the same exposure, the total exposure should be kept to 0 EV in any case.

3 **Refer to the diagram (b-13) to choose the setting.**
The diagram shows the relation between aperture, shutter speed, and gain.

Setting in step 2 (on page 107 and 108)
Aperture value: F11
Shutter speed: 1/50
Gain level: 0dB

Vertical axis: Aperture value in 0.5EV/step
Horizontal axis: Shutter speed in 0.5EV/2 steps, 0.5EV/step for shutter speeds between 1/4000 and 1/10000
Diagonal axis: Gain level in 0.5 EV/step

(b-14)



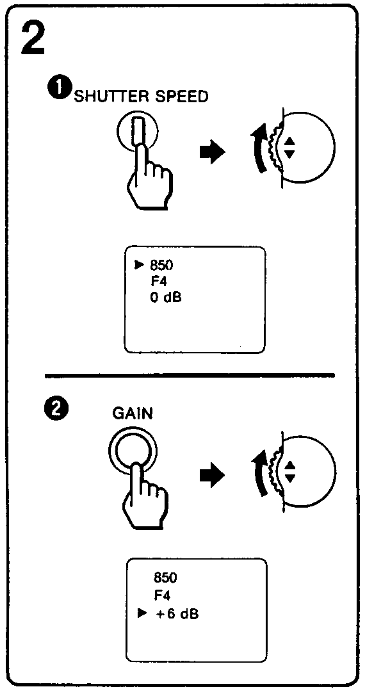
To set the aperture to F4 without changing the exposure
(b-13), (b-14)

1 **Press the IRIS button and move the CONTROL dial to set the aperture to F4.**
When shifting the aperture from F11 to F4, the exposure becomes 6 steps brighter. This means that in terms of EV, the total exposure becomes +3 EV. In order to keep the total exposure to 0 EV, reduce the exposure by −3 EV with shutter speed or gain.

2 **Case A: To reduce the exposure by shutter speed**
How it works:
What is required here is to reduce the exposure by −3 EV, i.e.12 steps, by shifting the shutter speed from 1/50 to 1/425.
Operation:
Press the SHUTTER SPEED button and move the CONTROL dial to set the shutter speed to 1/425.

	Aperture control		Shutter speed control
0 EV =	F11 to F4	+	1/50 to 1/425
	+3 EV		−3 EV

Continued on the next page



Case B: To keep the shutter speed at 1/850 and to reduce the exposure by gain level.

How it works:

When setting the shutter speed to 1/850, the total exposure is reduced to −4 EV. This means that +1 EV, i.e. 2 steps, should be added by controlling the gain level. Therefore, shift the gain level from 0 dB to +6 dB.

Operation:

❶ Press the SHUTTER SPEED button and set the shutter speed to 1/850.
❷ Press the GAIN button and set the gain level to +6 dB.

	Aperture control		Shutter speed control		Gain control
0 EV =	F11 to F4	+	1/50 to 1/850	+	0 dB to +6 dB
	+3 EV		−4 EV		+1 EV

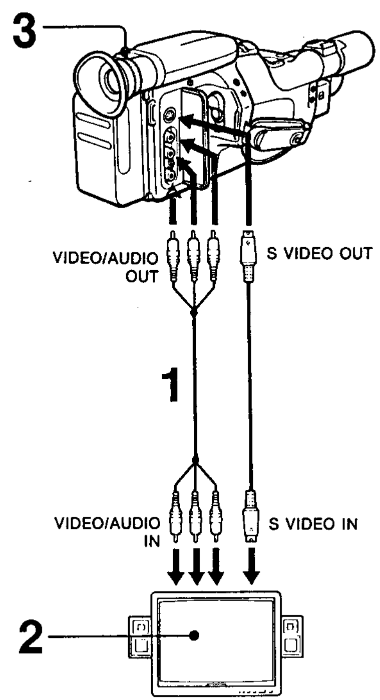
Hint for effective camera work

Gain can be used in terms of film sensitivity of a still camera.

Notes

- When shooting outdoors, the brightness of the object may change due to the change of weather.
- When the shooting condition changes, resetting of the parameters is recommended.

(c-1)



Custom Preset Function

The camcorder can be preset to record the picture with the desired colour and hue. Adjust the camera, if necessary, after making several trial recordings.

Connections

(c-1)

When using the custom preset function, adjust the picture by shooting a subject and checking the picture on a TV or a monitor.

1 **Connect the camcorder and the TV or monitor referring to the illustration.**

2 **Set the TV/VIDEO selector on the TV or monitor to VIDEO.**

3 **Press DATA SCREEN to display the CUSTOM PRESET menu indication in the viewfinder on the TV or monitor screen.**

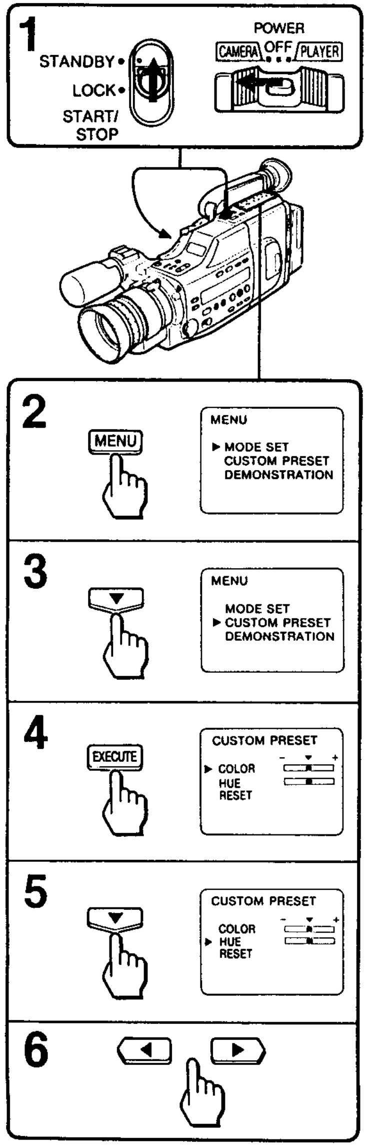
Understanding the setting in the CUSTOM PRESET menu

The custom preset function is effective only when the tape recorded in the CUSTOM PRESET mode is viewed on the TV or monitor that was connected to the camcorder at the time of the setting.
Therefore, the tape may not reproduce the picture in the expected colour or hue, when played back on a different TV or monitor.

Note

For details on the TV, refer to the instruction manual of the TV.

(c-2)


1
STANDBY
LOCK
START/
STOP
POWER
CAMERA
OFF
PLAYER
2
MENU
MENU
▶ MODE SET
CUSTOM PRESET
DEMONSTRATION
3
▼
MENU
MODE SET
▶ CUSTOM PRESET
DEMONSTRATION
4
EXECUTE
CUSTOM PRESET
- ▼ +
▶ COLOR
HUE
RESET
5
▼
CUSTOM PRESET
- ▼ +
COLOR
▶ HUE
RESET
6
◀
▶

Operation

(c-2)

1 **Set the POWER switch to CAMERA and slide the STANDBY switch up.**
The camcorder enters the recording standby mode.
In order to adjust the picture precisely, adjust the focus and white balance manually.

2 **Press MENU.**

3 **Press ▼ and move cursor to CUSTOM PRESET.**

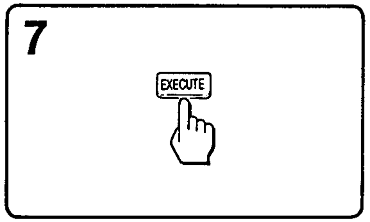
4 **Press EXECUTE.**
The CUSTOM PRESET menu is displayed.

5 **Press ▼ and move cursor to the item to be adjusted.**
Each press of ▼ moves the cursor to the item below. When the cursor is at RESET, press ▼ again to move the cursor to COLOR.

6 **Press ◀ or ▶ to adjust the picture shot by the camera by monitoring it on the TV or monitor screen.**
Three steps each from the standard position can be selected.

Parameter	Function	◀− ▼ +▶
COLOR	To adjust the colour intensity	Lighter Stronger
HUE	To adjust the hue	Purplish Greenish

Continued on the next page



7 **Check the cursor is not set to RESET and press EXECUTE.**
The CUSTOM PRESET menu is cleared and the new setting is stored in the memory.

To record in the setting made in the CUSTOM PRESET menu

1 **Set the camcorder in the recording pause mode.**

2 **Call up the MODE SET menu referring to page 61.**

3 **Select "CUSTOM MODE ON".**

4 **Press EXECUTE.**

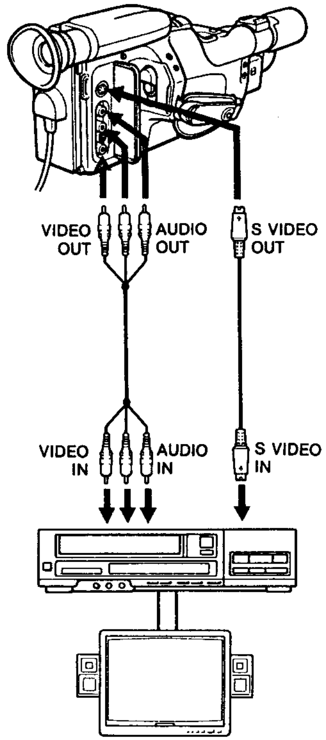
5 **Set the AUTO LOCK switch down.**

6 **Press START/STOP to start recording.**

To return to the standard setting
Set cursor to RESET in step 7 of "Operation" and press EXECUTE.
The CUSTOM PRESET menu is cleared. All of the parameters will be at the standard position the next time it is called up.

Note
The effect of the CUSTOM PRESET function may not be apparent depending upon the brightness, pattern, and colour of the subject.

(d)



Editing onto Another VTR

You can create your own video programme by editing with any other 8 mm, Betamax ß, or VHS VHS format VTR.

Before You Begin

(d)

- Make connections using the supplied A/V connecting cable for stereo equipment. For monaural equipment, connect only the white plug for audio and select "HIFI SOUND $\boxed{1}$" in the menu. See "Selecting the Monitor Sound" on page 51.
- Use of the supplied AC power adaptor is recommended.
- Select "EDIT ON" in the MODE SET menu. See page 59.
- Press DATA SCREEN to clear the indication from the viewfinder. Otherwise, the indication will be recorded together with the picture on the recording VTR.
- Set the input selector of the VTR to LINE, if available.

Operation

1 **Insert a tape for recording into the recording VTR.**

2 **Set the POWER switch on the camcorder to PLAYER and insert a source tape.**

3 **Playback the tape on the camcorder and locate the editing start point. Then set the camcorder to the playback pause mode.**

4 **Playback the tape on the recording VTR and locate the recording start point. Then set the VTR to the recording pause mode.**

5 **Release the pause mode on both VTRs.** Editing starts.

To stop editing momentarily
Press ❚❚ on the recording VTR.

To edit more scenes
Repeat steps 3 to 5.

To stop editing
Press ■ on both VTR.

To record a title
Use the camcorder as a player. Playback the tape and call up the title in the desired mode. The played back picture will be recorded on the recording VTR with the title superimposed. For details on the title, refer to pages 73 to 82.

Notes on edit function
When using the camcorder as the playback VTR, selecting the "EDIT ON" in the MODE SET menu activates the edit function. Picture deterioration resulting from editing can be kept to the minimum. However, avoid using the edited tape for multiple generations of editing.
Deactivate the edit function when not editing.

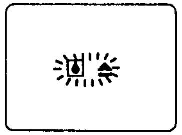
Notes and Precautions

Notes on Moisture Condensation

If the camcorder is brought directly from a cold place to a warm place, moisture may condense inside the camcorder, on the surface or the tape, or on the lens. In this condition, the tape may stick to the head drum and be damaged or the unit may not operate correctly. To prevent possible damage under these circumstances, the camcorder is furnished with moisture sensors.
However, take the following precautions.

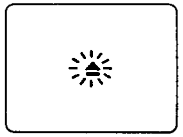
If moisture condenses inside the unit
(e-1)
Moisture is present inside the camcorder when the 💧 and ⏏ indications in the viewfinder blink. In this case, no function except for tape ejection will work.
Eject the tape, turn off the camcorder, and leave it with the cassette holder open for at least 1 hour.
The camcorder can be used again if the 💧 and ⏏ indications do not appear when the power is turned on again. (⏏ indication appears only when a tape is inserted.)

(e-1)



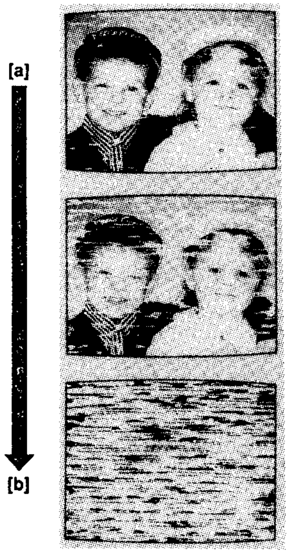
If moisture condenses on the surface of the tape
(e-2)
If moisture is present on the surface of the tape when the tape is inserted and a tape transport button (▷, ◀◀, etc.) is pressed, the ⏏ indication blinks inside the viewfinder.
In such case, no function except for tape ejection will work.
Eject the tape and let it sit for at least 1 hour.
The tape can be used again if the ⏏ indication does not appear when the tape is inserted and a tape transport button is pressed.

(e-2)



If moisture condenses on the lens
No caution indications, will appear, but the picture becomes dim.
Turn off the power and leave the camcorder unused for at least 1 hour.

(e-3)



Notes on Video Head Cleaning

To ensure clear picture, clean the video heads periodically.
When playback, pictures are noisy or hardly visible, the video heads may be contaminated.
(e-3)
[a] Slight contamination
[b] Critical contamination
In such cases,

1. **Clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied), referring to its instrucions.**
2. **After cleaning, check if the picture is clear by recording or playing back with an ordinary tape.**
3. **If the picture is still noisy, repeat cleaning. (Do not repeat cleaning more than 5 times).**

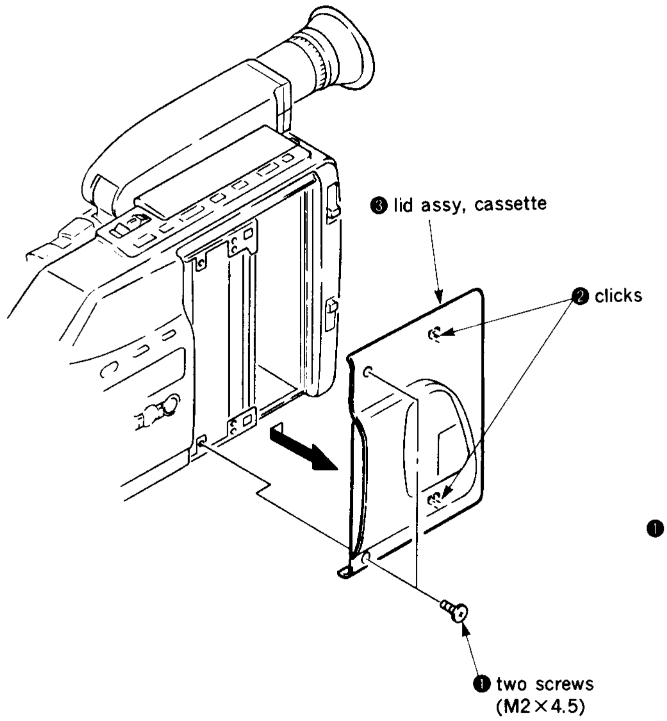
Caution
Do not use a commercially available wet-type cleaning cassette. If may damage the video heads.

Note
If the V8-25CLH cleaning cassette is not available in your area, consult your Sony service facility.

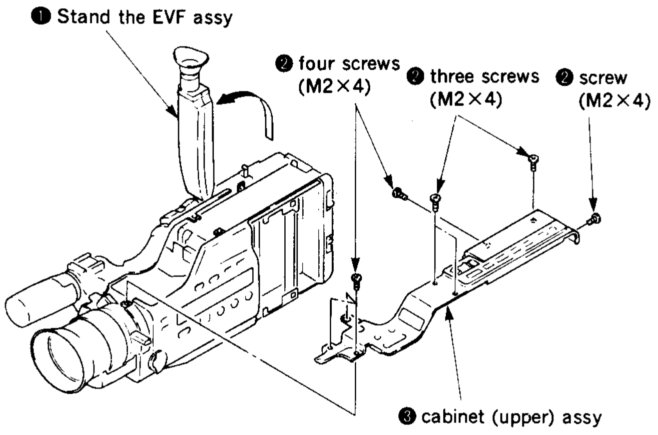
SECTION 2
DISASSEMBLY

2-1. REMOVAL OF CASSETTE LID ASSY

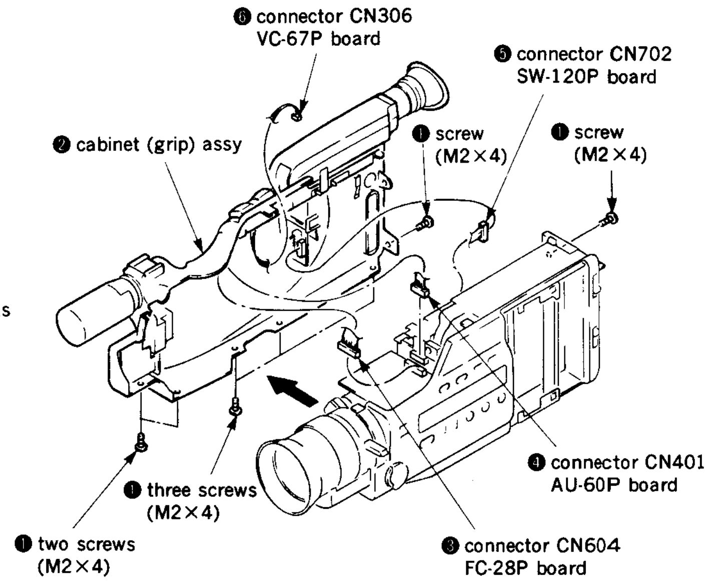
Note: When mounting, fit the clicks ❷ into holes completely, then clamp two screws ❶.


❸ lid assy, cassette
❷ clicks
❶ two screws (M2×4.5)

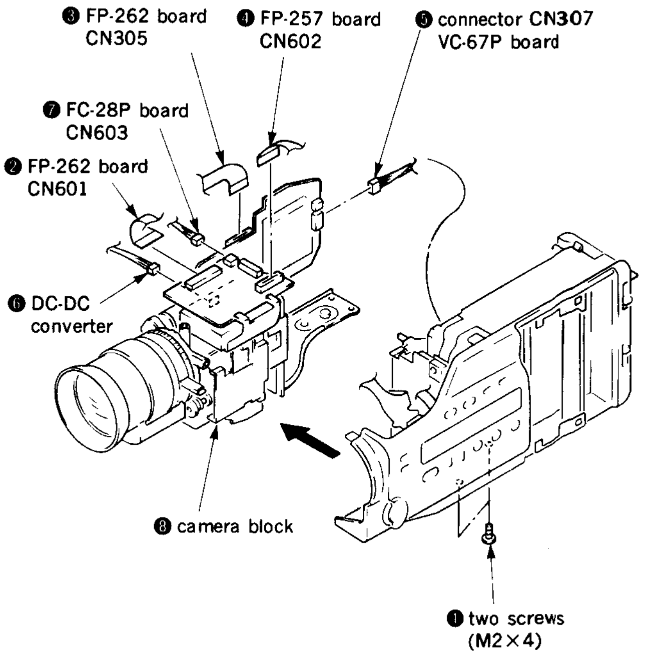
2-2. REMOVAL OF CABINET (UPPER) ASSY


❶ Stand the EVF assy
❷ four screws (M2×4)
❷ three screws (M2×4)
❷ screw (M2×4)
❸ cabinet (upper) assy

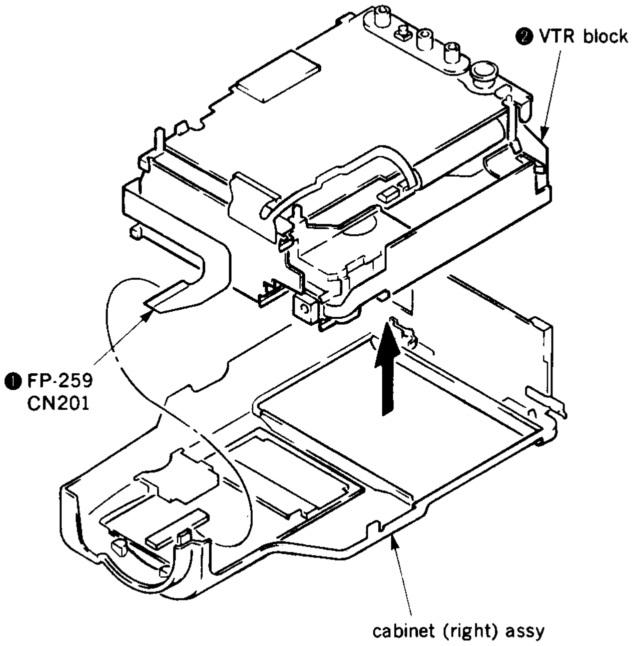
2-3. REMOVAL OF CABINET (GRIP) ASSY


❻ connector CN306 VC-67P board
❺ connector CN702 SW-120P board
❷ cabinet (grip) assy
❶ screw (M2×4)
❶ screw (M2×4)
❹ connector CN401 AU-60P board
❶ three screws (M2×4)
❶ two screws (M2×4)
❸ connector CN604 FC-28P board

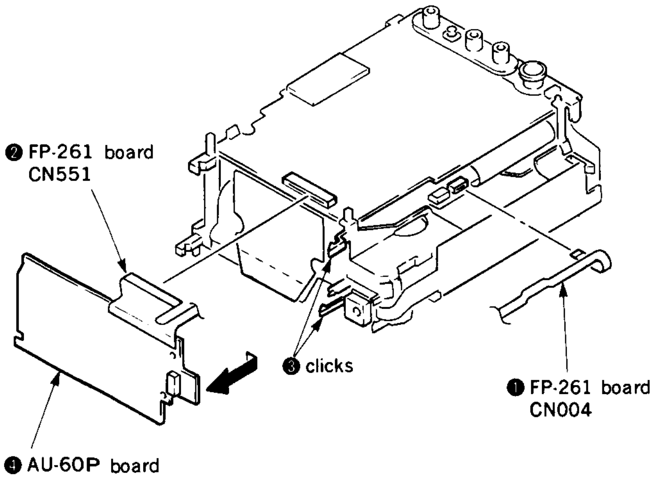
2-4. REMOVAL OF CAMERA BLOCK


❸ FP-262 board CN305
❹ FP-257 board CN602
❺ connector CN307 VC-67P board
❼ FC-28P board CN603
❷ FP-262 board CN601
❻ DC-DC converter
❽ camera block
❶ two screws (M2×4)

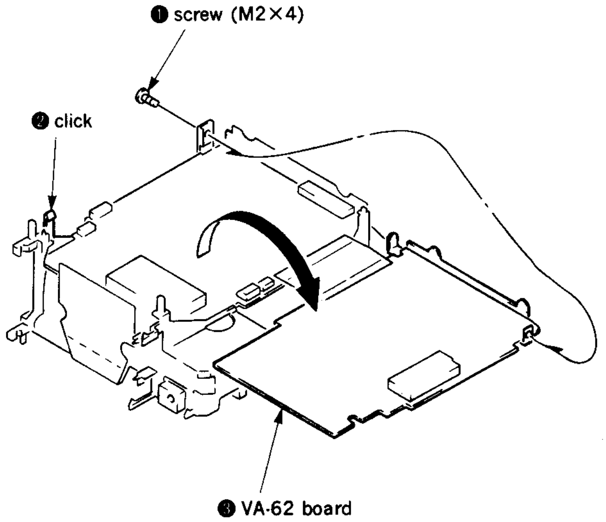
2-5. REMOVAL OF VTR BLOCK


② VTR block
① FP-259
CN201
cabinet (right) assy

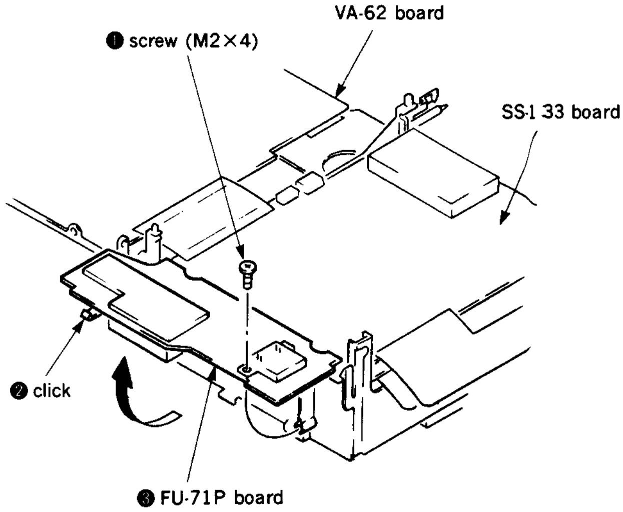
2-6. REMOVAL OF AU-60P BOARD


② FP-261 board
CN551
③ clicks
① FP-261 board
CN004
④ AU-60P board

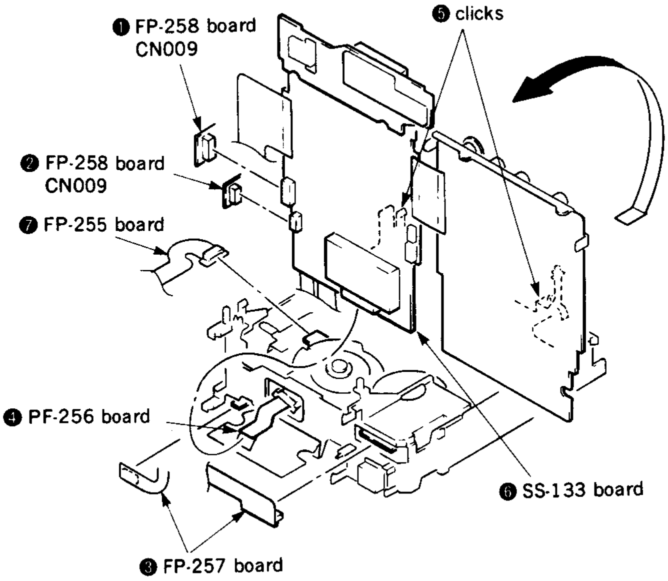
2-7. OPENING OF VA-62 BOARD


① screw (M2×4)
② click
③ VA-62 board

2-8. OPENING OF FU-71P BOARD

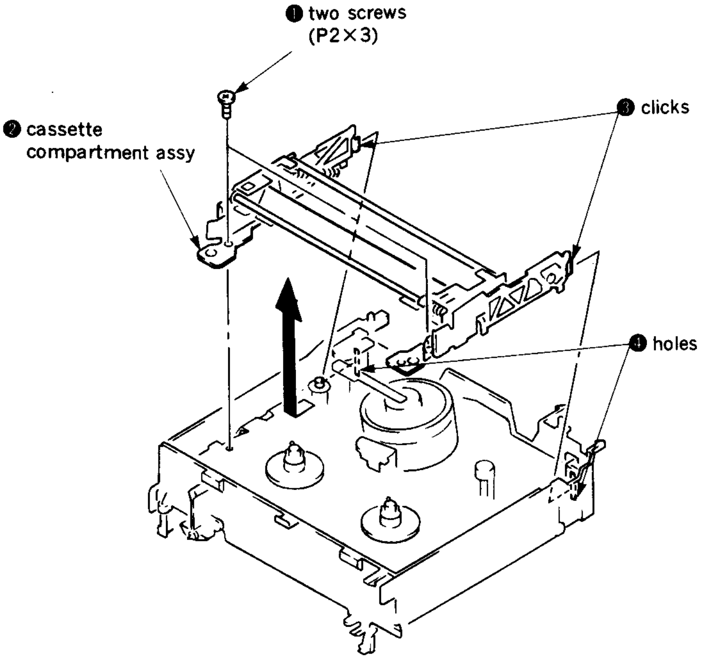

VA-62 board
① screw (M2×4)
SS-133 board
② click
③ FU-71P board

2-9. REMOVAL OF SS-133 BOARD

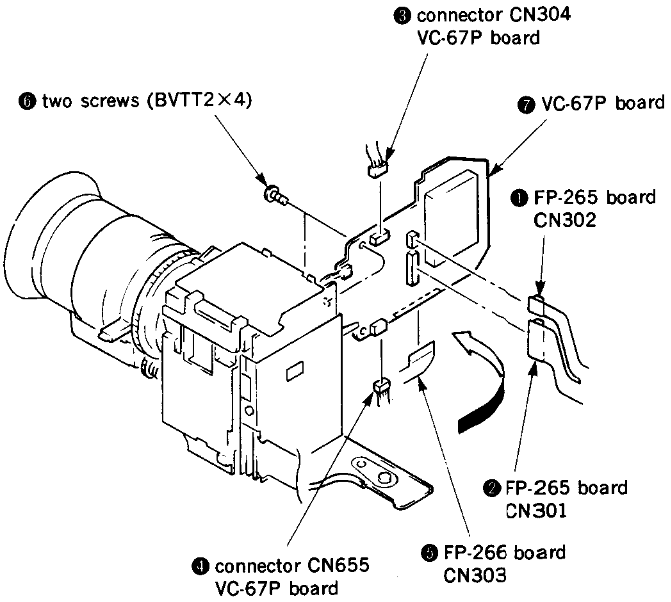

① FP-258 board CN009
⑤ clicks
② FP-258 board CN009
⑦ FP-255 board
④ PF-256 board
⑥ SS-133 board
③ FP-257 board

2-10. REMOVAL OF CASSETTE COMPARTMENT ASSEMBLY

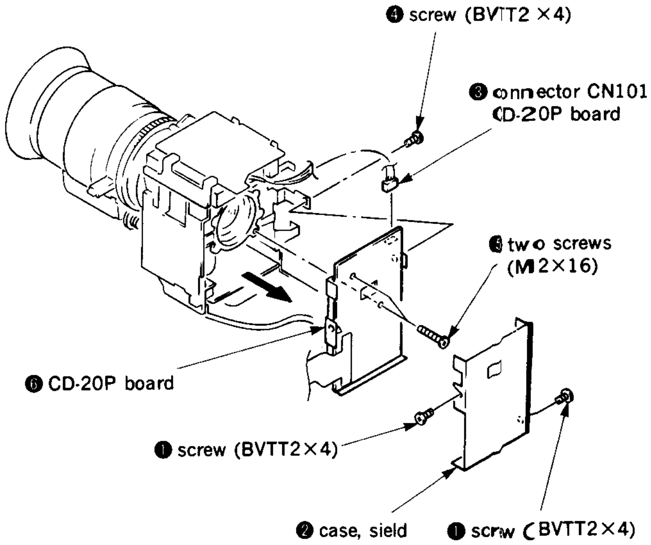
Note: When mounting, fit clicks ③ into completely, then clamp two screws ①.


① two screws (P2×3)
② cassette compartment assy
③ clicks
④ holes

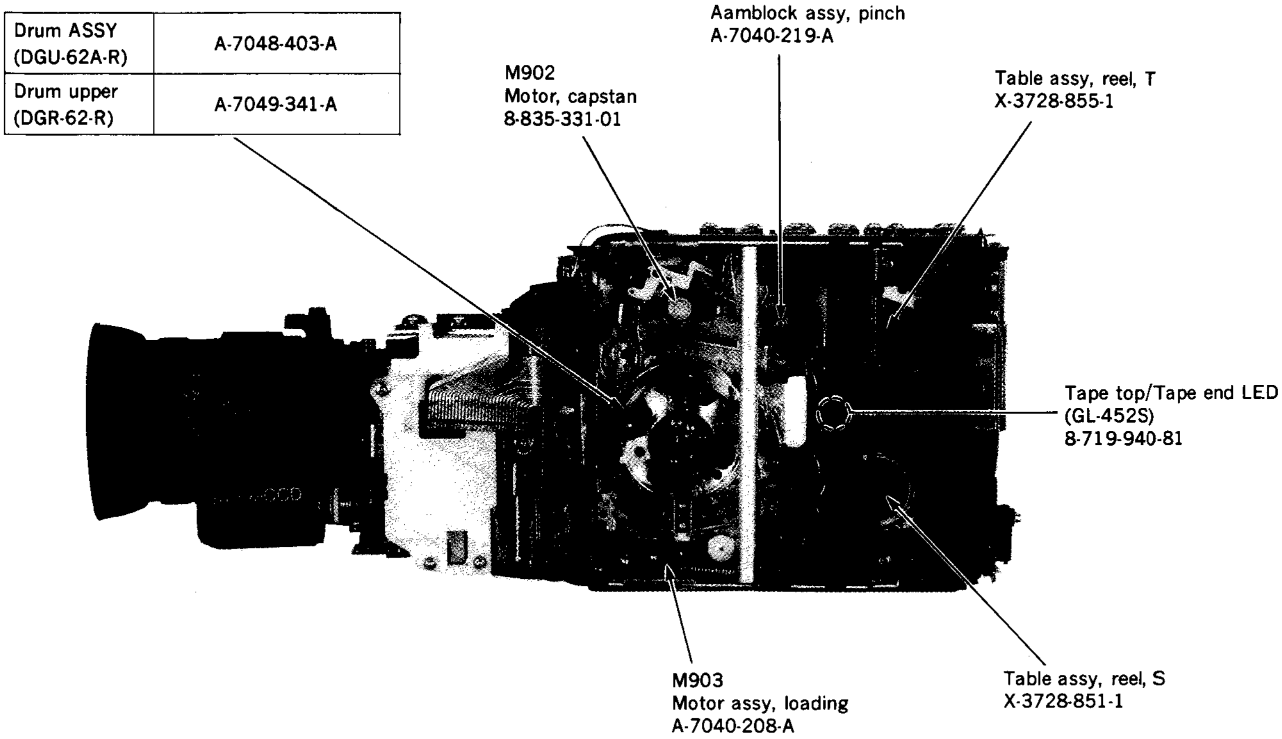
2-11. OPENING OF VC-67P BOARD


③ connector CN304 VC-67P board
⑥ two screws (BVTT2×4)
⑦ VC-67P board
① FP-265 board CN302
② FP-265 board CN301
④ connector CN655 VC-67P board
⑤ FP-266 board CN303

2-12. REMOVAL OF CD-20P BOARD

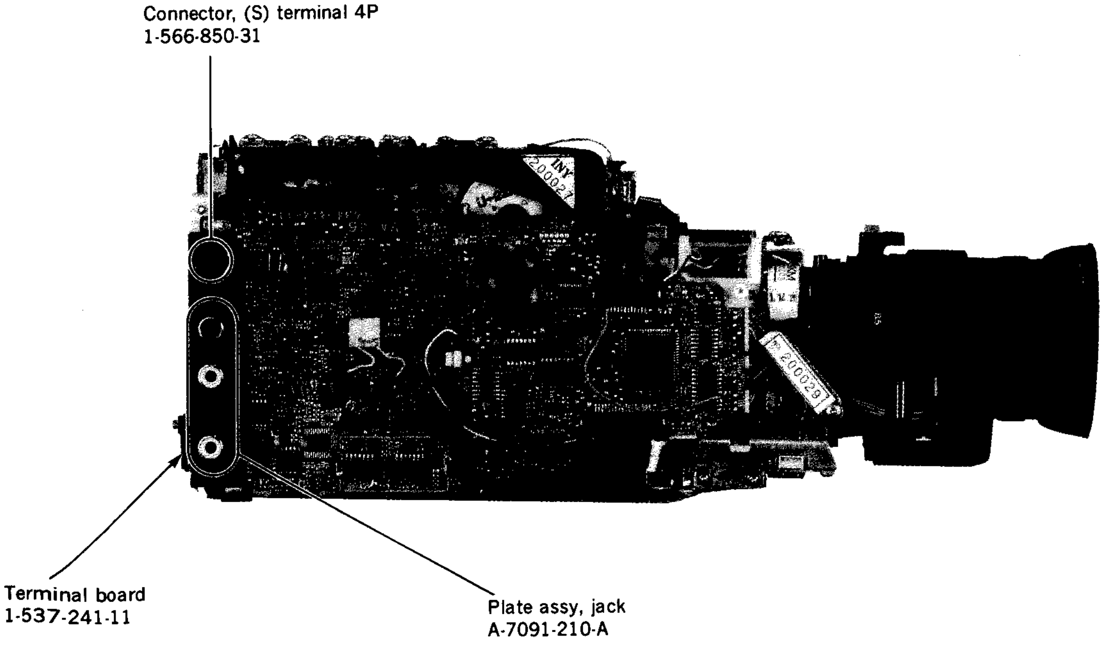

④ screw (BVTT2 ×4)
③ connector CN101 CD-20P board
⑤ two screws (M2×16)
⑥ CD-20P board
① screw (BVTT2×4)
② case, sield
① screw (BVTT2×4)

2-13. INTERNAL VIEWS



Drum ASSY (DGU-62A-R)	A-7048-403-A
Drum upper (DGR-62-R)	A-7049-341-A

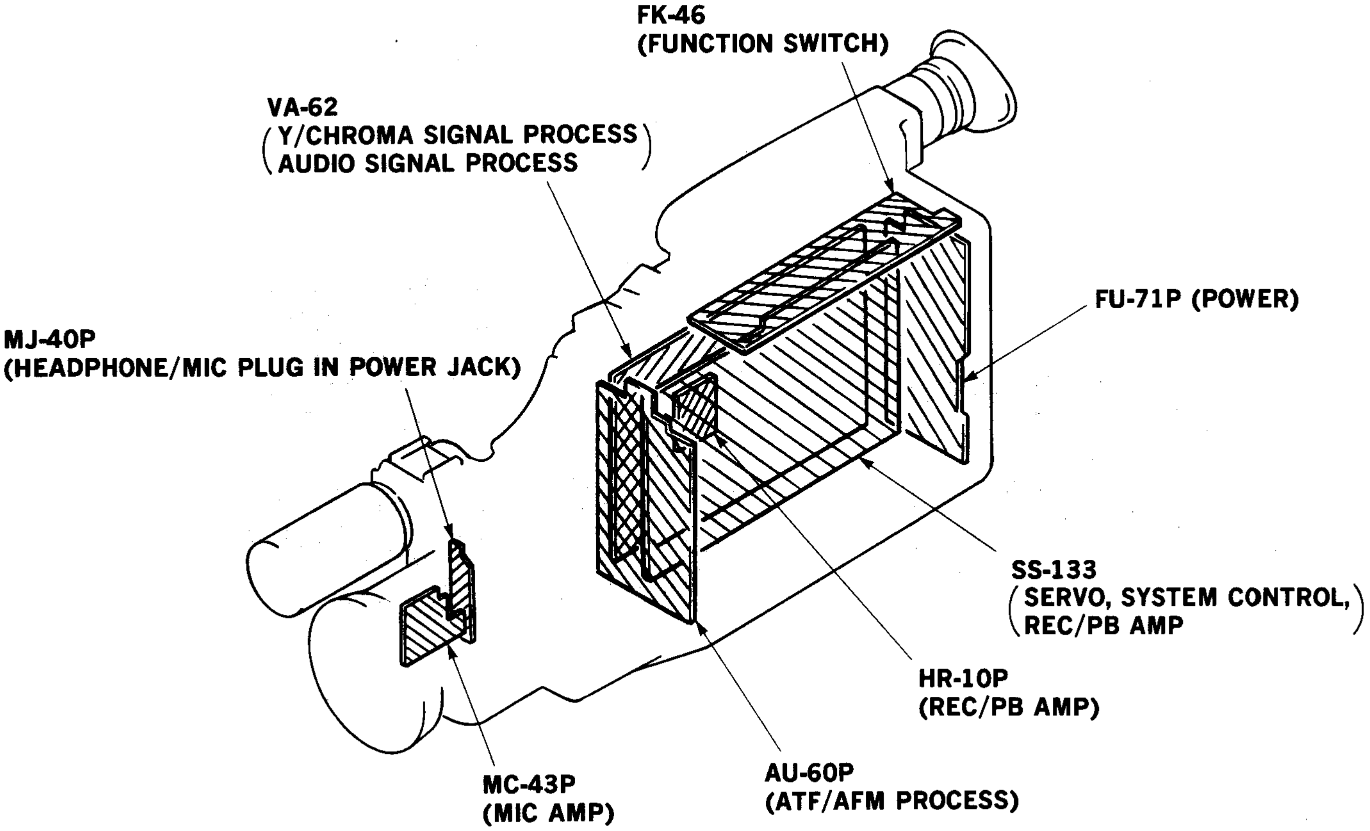
M902
Motor, capstan
8-835-331-01
Aamblock assy, pinch
A-7040-219-A
Table assy, reel, T
X-3728-855-1
Tape top/Tape end LED
(GL-452S)
8-719-940-81
M903
Motor assy, loading
A-7040-208-A
Table assy, reel, S
X-3728-851-1

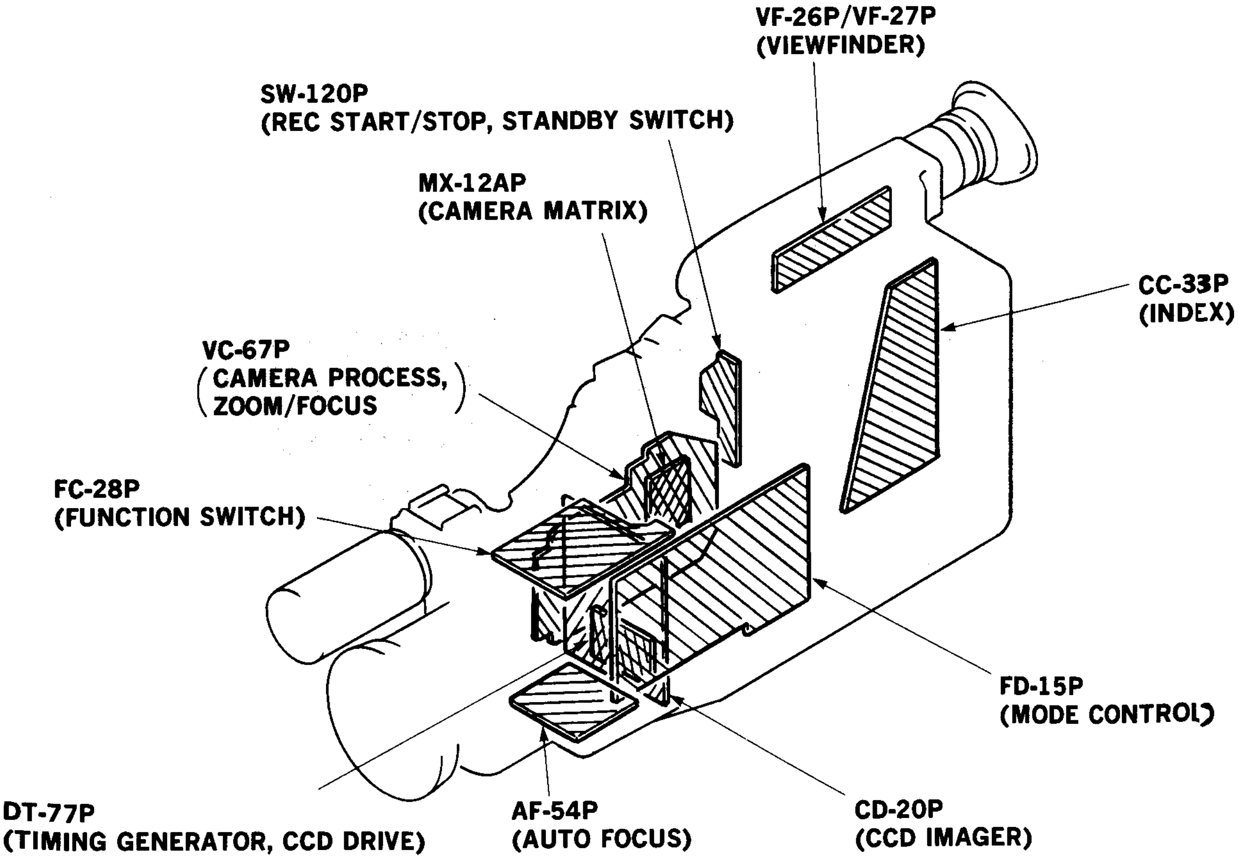


Connector, (S) terminal 4P
1-566-850-31
Terminal board
1-537-241-11
Plate assy, jack
A-7091-210-A

SECTION 3
DIAGRAMS

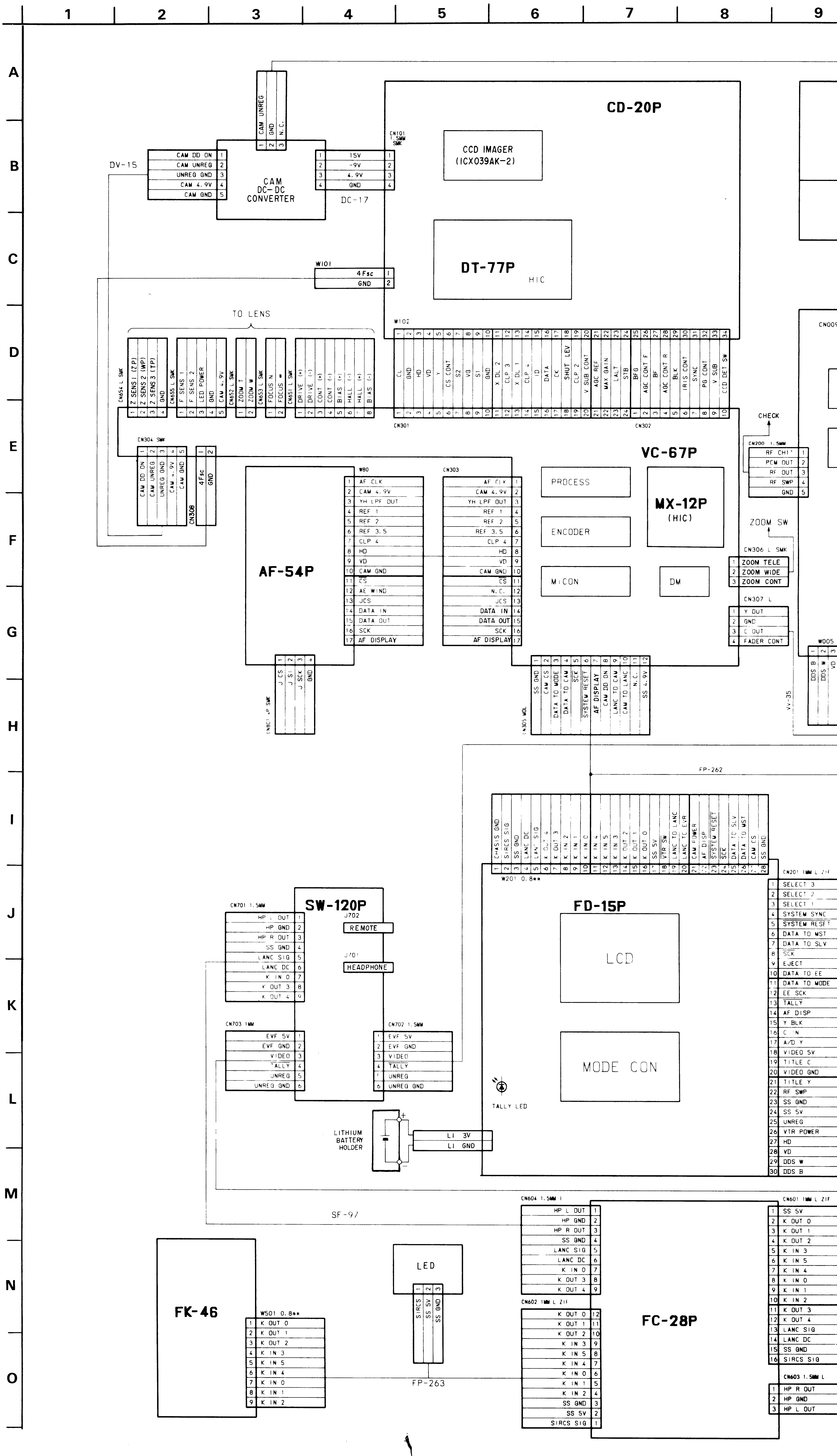
3-1. CIRCUIT BOARDS LOCATION


FK-46
(FUNCTION SWITCH)
VA-62
(Y/CHROMA SIGNAL PROCESS
AUDIO SIGNAL PROCESS)
FU-71P (POWER)
MJ-40P
(HEADPHONE/MIC PLUG IN POWER JACK)
SS-133
(SERVO, SYSTEM CONTROL,
REC/PB AMP)
HR-10P
(REC/PB AMP)
MC-43P
(MIC AMP)
AU-60P
(ATF/AFM PROCESS)

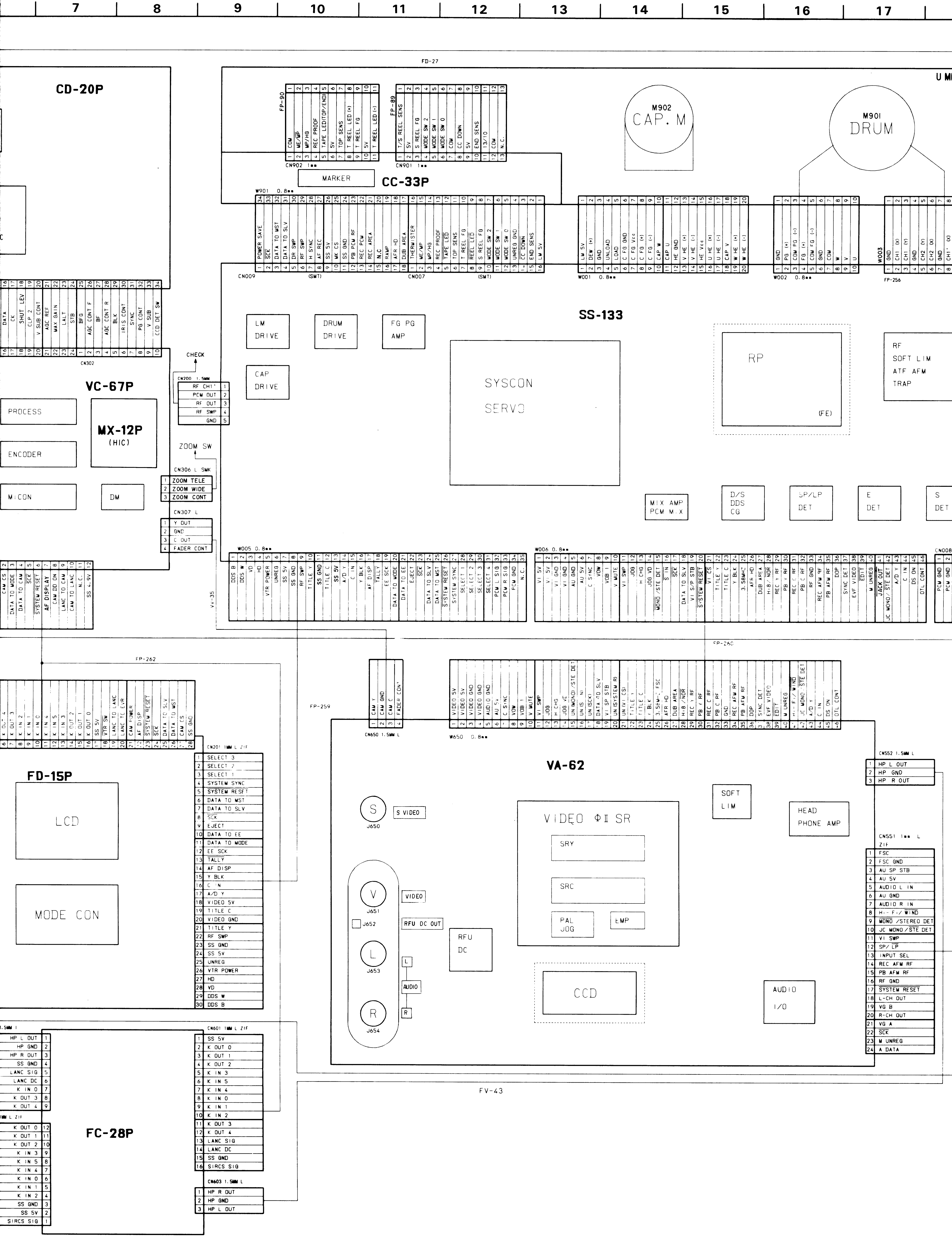

VF-26P/VF-27P
(VIEWFINDER)
SW-120P
(REC START/STOP, STANDBY SWITCH)
MX-12AP
(CAMERA MATRIX)
CC-33P
(INDEX)
VC-67P
(CAMERA PROCESS,
ZOOM/FOCUS)
FC-28P
(FUNCTION SWITCH)
FD-15P
(MODE CONTROL)
DT-77P
(TIMING GENERATOR, CCD DRIVE)
AF-54P
(AUTO FOCUS)
CD-20P
(CCD IMAGER)

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

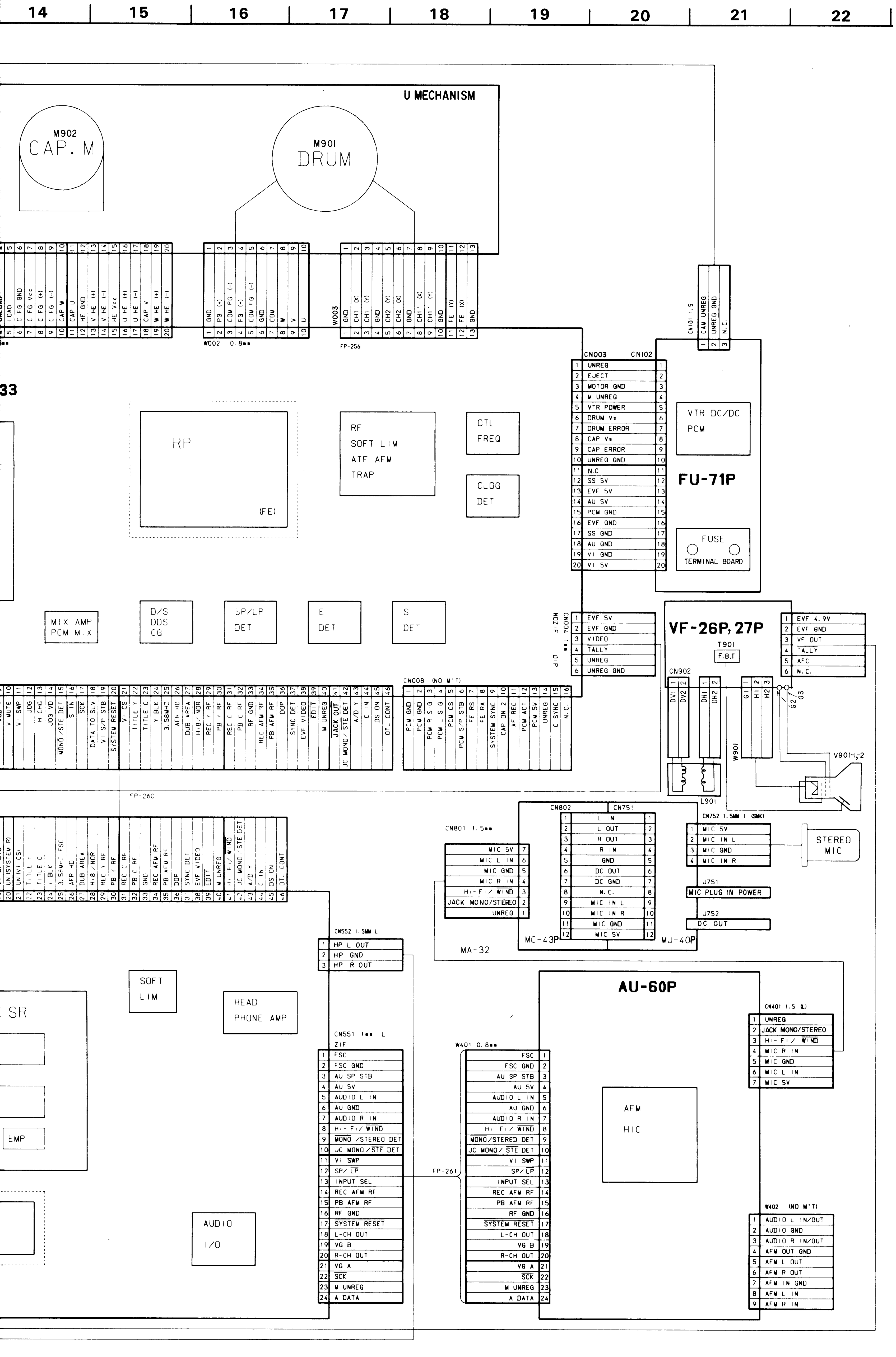
4-1. FRAME SCHEMATIC DIAGRAM



CD-20P
CCD IMAGER (ICX039AK-2)
DT-77P
HIC
CAM DC-DC CONVERTER
DV-15
DC-17
W101
TO LENS
VC-67P
PROCESS
ENCODER
MICON
MX-12P (HIC)
DM
CHECK
ZOOM SW
AF-54P
VV-35
FP-262
FD-15P
LCD
MODE CON
TALLY LED
SW-120P
J702 REMOTE
J701 HEADPHONE
LITHIUM BATTERY HOLDER
LI 3V
LI GND
SF-97
FK-46
LED
FP-263
FC-28P
W501 0.8mm
CN601 1MM L ZIF
CN602 1MM L ZIF
CN603 1.5MM L
CN604 1.5MM L
CN201 1MM L ZIF
CN701 1.5MM
CN702 1.5MM
CN703 1MM
CN301
CN302
CN303
CN304 SMK
CN306 L SMK
CN307 L
CN308
W80
W102
W201 0.8mm
W005



7
8
9
10
11
12
13
14
15
16
17
CD-20P
FD-27
FP-90
FP-89
CN902 1mm
CN901 1mm
COM
WE/WP
WP/HG
REC PROOF
TAPE LED(TOP/END)
5V
TOP SENS
T REEL LED (+)
T REEL FG
5V
T REEL LED (-)
T/S REEL SENS
5V
S REEL FG
MODE SW 2
MODE SW 1
MODE SW 0
COM
CC DOWN
5V
END SENS
13/10
COM
N.C.
MARKER
CC-33P
M902
CAP. M
M901
DRUM
W901 0.8mm
POWER SAVE
SCK
DATA TO MST
DATA TO SLV
DR SWP
RF SWP
H SYNC
AF REC
SS 5V
MK CS
SS GND
PB PCM RF
REC PCM
REC AREA
N.C
RAMP
AFR HD
DUB AREA
THERMISTER
WE/WP
WP/HG
REC PROOF
TAPE LED
TOP SENS
T REEL FG
REEL LED
S REEL FG
MODE SW 2
MODE SW 1
MODE SW 0
UNREG GND
CC DOWN
END SENS
LM 5V
CN009
(SMT)
CN007
(SMT)
LM 5V
DEW (+)
GND
UNLOAD
LOAD
C FG GND
C FG Vcc
C FG (+)
C FG (-)
CAP W
CAP U
HE GND
V HE (+)
V HE (-)
HE Vcc
U HE (+)
U HE (-)
CAP V
W HE (+)
W HE (-)
W001 0.8mm
GND
PG (+)
COM PG (-)
FG (+)
COM FG (-)
GND
COM
W
V
U
W002 0.8mm
W003
GND
CH1 (X)
CH1 (Y)
GND
CH2 (Y)
CH2 (X)
GND
CH1' (X)
FP-256
U M
DATA
CK
SHUT LEV
CLP 2
V SUB CONT
AGC REF
MAX GAIN
LALT
STB
BFG
AGC CONT F
BF
AGC CONT R
BLK
IRIS CONT
SYNC
PG CONT
V SUB
CCD DET SW
CN302
CHECK
CN200 1.5MM
RF CH1'
PCM OUT
RF OUT
RF SWP
GND
VC-67P
PROCESS
MX-12P
(HIC)
ENCODER
MICON
DM
ZOOM SW
CN306 L 5MM
ZOOM TELE
ZOOM WIDE
ZOOM CONT
CN307 L
Y OUT
GND
C OUT
FADER CONT
SS-133
LM DRIVE
DRUM DRIVE
FG PG AMP
CAP DRIVE
SYSCON
SERVO
RP
(FE)
RF
SOFT LIM
ATF AFM
TRAP
MIX AMP
PCM MIX
D/S
DDS
CG
SP/LP
DET
E
DET
S
DET
CAM CS
DATA TO MODE
DATA TO CAM
SCK
SYSTEM RESET
AF DISPLAY
CAM DD ON
LANC TO CAM
CAM TO LANC
N.C.
SS 4.9V
W005 0.8mm
DDS B
DDS W
VD
HD
VTR POWER
UNREG
SS 5V
SS GND
RF SWP
TITLE Y
SS GND
TITLE C
SS 5V
A/D Y
C IN
Y BLK
AF DISP
TALLY
EE SCK
DATA TO MODE
DATA TO EE
EJECT
SCK
DATA TO SLV
DATA TO MST
SYSTEM RESET
SYSTEM SYNC
SELECT 1
SELECT 2
SELECT 3
SELECT 4
PCM L SIG
PCM R SIG
PCM GND
N.C.
VV-35
W006 0.8mm
VI 5V
VI 5V
VI GND
VI GND
AU GND
AU 5V
C SYNC
VOW
VOB 1
V MUTE
VI SWP
JOG
H CHG
JOG VD
MONO/STE DET
S IN
SCK
DATA TO SLV
VI S/P STB
SYSTEM RESET
VI CS
TITLE Y
TITLE C
Y BLK
3.58MHz
AFR HD
DUB AREA
Hi8/NOR
REC Y RF
PB Y RF
REC C RF
PB C RF
RF GND
REC AFM RF
PB AFM RF
DOP
SYNC DET
EVF VIDEO
EDIT
M UNREG
JACK OUT
JC MONO/STE DET
A/D Y
C IN
DS ON
OTL CONT
CN008
PCM GND
PCM GND
FP-260
FP-262
K OUT 4
K OUT 3
K IN 2
K IN 1
K IN 0
K IN 4
K IN 5
K IN 3
K OUT 2
K OUT 1
K OUT 0
SS 5V
VTR SW
LANC TO LANC
LANC TO EVR
CAM POWER
AF DISP
SYSTEM RESET
SCK
DATA TO SLV
DATA TO MST
CAM CS
SS GND
CN201 1MM L ZIF
SELECT 3
SELECT 2
SELECT 1
SYSTEM SYNC
SYSTEM RESET
DATA TO MST
DATA TO SLV
SCK
EJECT
DATA TO EE
DATA TO MODE
EE SCK
TALLY
AF DISP
Y BLK
C IN
A/D Y
VIDEO 5V
TITLE C
VIDEO GND
TITLE Y
RF SWP
SS GND
SS 5V
UNREG
VTR POWER
HD
VD
DDS W
DDS B
FD-15P
LCD
MODE CON
FP-259
CAM Y
CAM GND
CAM C
FADER CONT
CN650 1.5MM L
VIDEO 5V
VIDEO 5V
VIDEO GND
VIDEO GND
AUDIO GND
AU 5V
C SYNC
VOW
VOB 1
VI SWP
JOG
H CHG
JOG VD
UN (MONO)/STE DET
UN (S. IN)
UN (SCK)
DATA TO SLV
VI SP STB
UN (SYSTEM R)
UN (VI CS)
TITLE Y
TITLE C
Y BLK
3.58MHz FSC
AFR HD
DUB AREA
Hi8/NOR
REC Y RF
PB Y RF
REC C RF
PB C RF
GND
REC AFM RF
PB AFM RF
DOP
SYNC DET
EVF VIDEO
EDIT
M UNREG
Hi-Fi/WIND
JC MONO/STE DET
A/D Y
C IN
DS ON
OTL CONT
W650 0.8mm
VA-62
S
J650
S VIDEO
V
J651
VIDEO
J652
RFU DC OUT
L
J653
AUDIO
R
J654
RFU
DC
SOFT
LIM
VIDEO ΦII SR
SRY
SRC
PAL
JOG
EMP
CCD
HEAD
PHONE AMP
AUDIO
I/O
CN552 1.5MM L
HP L OUT
HP GND
HP R OUT
CN551 1mm L
ZIF
FSC
FSC GND
AU SP STB
AU 5V
AUDIO L IN
AU GND
AUDIO R IN
Hi-Fi/WIND
MONO/STEREO DET
JC MONO/STE DET
VI SWP
SP/LP
INPUT SEL
REC AFM RF
PB AFM RF
RF GND
SYSTEM RESET
L-CH OUT
VG B
R-CH OUT
VG A
SCK
M UNREG
A DATA
FV-43
1.5MM L
HP L OUT
HP GND
HP R OUT
SS GND
LANC SIG
LANC DC
K IN 0
K OUT 3
K OUT 4
1MM L ZIF
K OUT 0
K OUT 1
K OUT 2
K IN 3
K IN 5
K IN 4
K IN 0
K IN 1
K IN 2
SS GND
SS 5V
SIRCS SIG
FC-28P
CN601 1MM L ZIF
SS 5V
K OUT 0
K OUT 1
K OUT 2
K IN 3
K IN 5
K IN 4
K IN 0
K IN 1
K IN 2
K OUT 3
K OUT 4
LANC SIG
LANC DC
SS GND
SIRCS SIG
CN603 1.5MM L
HP R OUT
HP GND
HP L OUT


14
15
16
17
18
19
20
21
22
U MECHANISM
M902
CAP. M
M901
DRUM
GND
PG (+)
COM PG (-)
FG (+)
COM FG (-)
COM
W
V
U
W002 0.8mm
W003
GND
CH1 (X)
CH1 (Y)
GND
CH2 (Y)
CH2 (X)
GND
CH1' (X)
CH1' (Y)
GND
FE (Y)
FE (X)
GND
FP-256
CN101 1.5
CAM UNREG
UNREG GND
N.C.
33
RP
(FE)
RF
SOFT LIM
ATF AFM
TRAP
OTL
FREQ
CLOG
DET
CN003
CN102
UNREG
EJECT
MOTOR GND
M UNREG
VTR POWER
DRUM Vs
DRUM ERROR
CAP Vs
CAP ERROR
UNREG GND
N.C
SS 5V
EVF 5V
AU 5V
PCM GND
EVF GND
SS GND
AU GND
VI GND
VI 5V
VTR DC/DC
PCM
FU-71P
FUSE
TERMINAL BOARD
MIX AMP
PCM MIX
D/S
DDS
CG
SP/LP
DET
E
DET
S
DET
CN004 1mm
ZIF
DIP
EVF 5V
EVF GND
VIDEO
TALLY
UNREG
UNREG GND
VF-26P, 27P
T901
F.B.T
EVF 4.9V
EVF GND
VF OUT
TALLY
AFC
N.C.
CN902
DV1
DV2
DH1
DH2
G1
H1
H2
W901
G2
G3
V901-1, -2
L901
CN008 (NO M'T)
PCM GND
PCM GND
PCM R SIG
PCM L SIG
PCM CS
PCM S/P STB
FE RS
FE RA
SYSTEM SYNC
CAP ON 2
AF REC
PCM ACT
PCM 5V
UNREG
C SYNC
N.C.
FP-260
CN802
CN751
L IN
L OUT
R OUT
R IN
GND
DC OUT
DC GND
N.C.
MIC IN L
MIC IN R
MIC GND
MIC 5V
CN801 1.5mm
MIC 5V
MIC L IN
MIC GND
MIC R IN
Hi-Fi/WIND
JACK MONO/STEREO
UNREG
MA-32
MC-43P
MJ-40P
CN752 1.5mm
MIC 5V
MIC IN L
MIC GND
MIC IN R
STEREO
MIC
J751
MIC PLUG IN POWER
J752
DC OUT
CN552 1.5mm L
HP L OUT
HP GND
HP R OUT
SOFT
LIM
HEAD
PHONE AMP
SR
EMP
AUDIO
I/O
CN551 1mm L
ZIF
FSC
FSC GND
AU SP STB
AU 5V
AUDIO L IN
AU GND
AUDIO R IN
Hi-Fi/WIND
MONO/STEREO DET
JC MONO/STE DET
VI SWP
SP/LP
INPUT SEL
REC AFM RF
PB AFM RF
RF GND
SYSTEM RESET
L-CH OUT
VG B
R-CH OUT
VG A
SCK
M UNREG
A DATA
FP-261
W401 0.8mm
AU-60P
AFM
HIC
CN401 1.5 (L)
UNREG
JACK MONO/STEREO
Hi-Fi/WIND
MIC R IN
MIC GND
MIC L IN
MIC 5V
W402 (NO M'T)
AUDIO L IN/OUT
AUDIO GND
AUDIO R IN/OUT
AFM OUT GND
AFM L OUT
AFM R OUT
AFM IN GND
AFM L IN
AFM R IN

4-2. PRINTED WIRING BOARDS AND S

THIS NOTE IS COMMON FOR PRI
AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary r

- **For printed wiring boards.**
- ● : Through hole.
- ▒ : Pattern from the side which enables se
- ▓ : Pattern of the rear side. *
- Circled numbers refer to waveforms.

- **For schematic diagram.**
- Caution when replacing chip parts.
  New parts must be attached after removal o
  Be careful not to heat the minus side of
  because it is damaged by the heat.
- All resistors are in ohms, 1/10W or 1/16V
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise not
  50V or less are not indicated except for ele
  tantalums.
- All variable and adjustable resistors have
  unless otherwise noted.
- ⊡ : nonflammable resistor.
- ⊡ : fusible resistor.
- ☐ : panel designation.
- △ : internal component.
- ☐ : adjustment for repair. *
- ▬ : B + Line *
- Circled numbers refer to waveforms. *
- ⇨ : IN/OUT direction of B (+, −) line. *

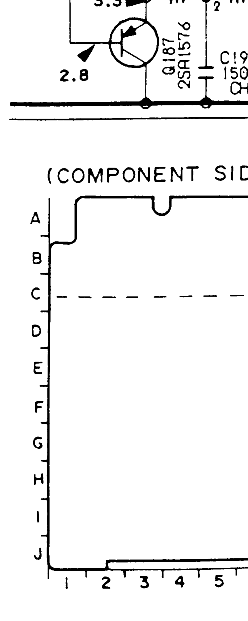
Note: The components identified by mark
line with mark ⚠ are critical for safet
Replace only with part number specifi

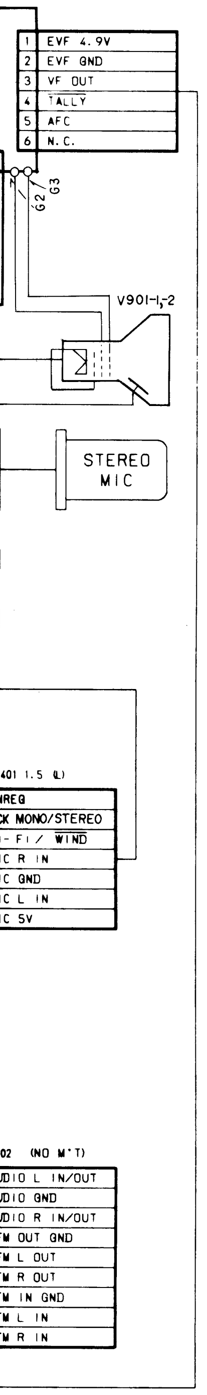
When indicating parts by reference number, please include the board name.

* Indicated by the color red.

[SEMICONDUCTOR LOCATION]

In this service manual, the mounted loc
semiconductors (IC, transistor, diodes) are indi
shown below. This enables to find the locatio
easily when servicing.


Q187(E-21)
BUFFER
R201
4700
R202
1500
RB
15
1/
3.3
2
2.8
Q187
2SA1576
C19
150
CH
(COMPONENT SID
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5


1 EVF 4.9V
2 EVF GND
3 VF OUT
4 TALLY
5 AFC
6 N.C.
G2
G3
V901-1,-2
STEREO MIC
401 1.5 (L)
REG
CK MONO/STEREO
-FI / WIND
C R IN
C GND
C L IN
C 5V
02 (NO M'T)
DIO L IN/OUT
DIO GND
DIO R IN/OUT
M OUT GND
M L OUT
M R OUT
M IN GND
M L IN
M R IN

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

- **For printed wiring boards.**
- ● : Through hole.
- ░ : Pattern from the side which enables seeing.
- ▓ : Pattern of the rear side. *
- Circled numbers refer to waveforms.

- **For schematic diagram.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W or 1/16W unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.

- All capacitors are in μF unless otherwise noted. pF : μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repair. *
- ━ : B + Line *
- Circled numbers refer to waveforms. *
- ⇨ : IN/OUT direction of B (+, −) line. *

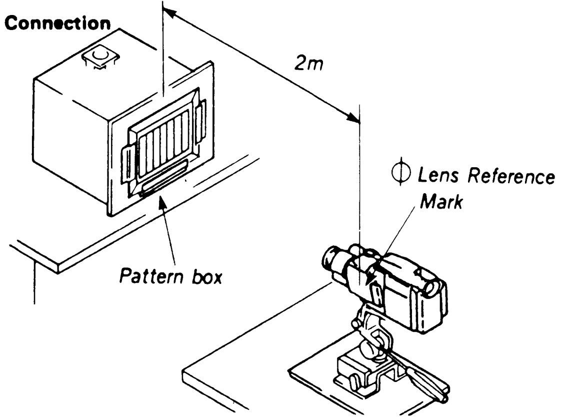
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

* Indicated by the color red.

- **For voltage and waveforms. (CAM REC mode)**
- Voltage and waveform measuring conditions: *
  (1) Sample object: Pattern box color bars. *
  (2) Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more). *

1. Connection


2m
Lens Reference Mark
Pattern box

2. Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.

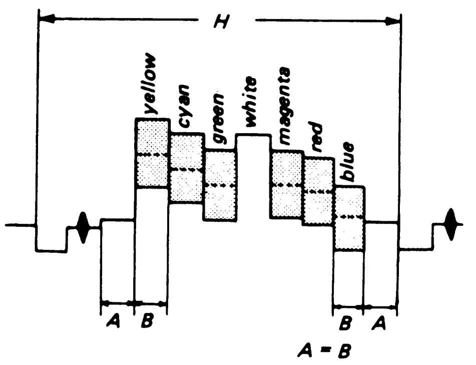

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A = B

Fig. a Video output waveform.

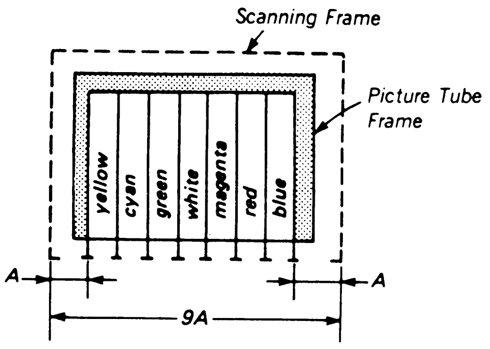

Scanning Frame
Picture Tube Frame
yellow
cyan
green
white
magenta
red
blue
A
A
9A

Fig. b Picture of TV monitor screen

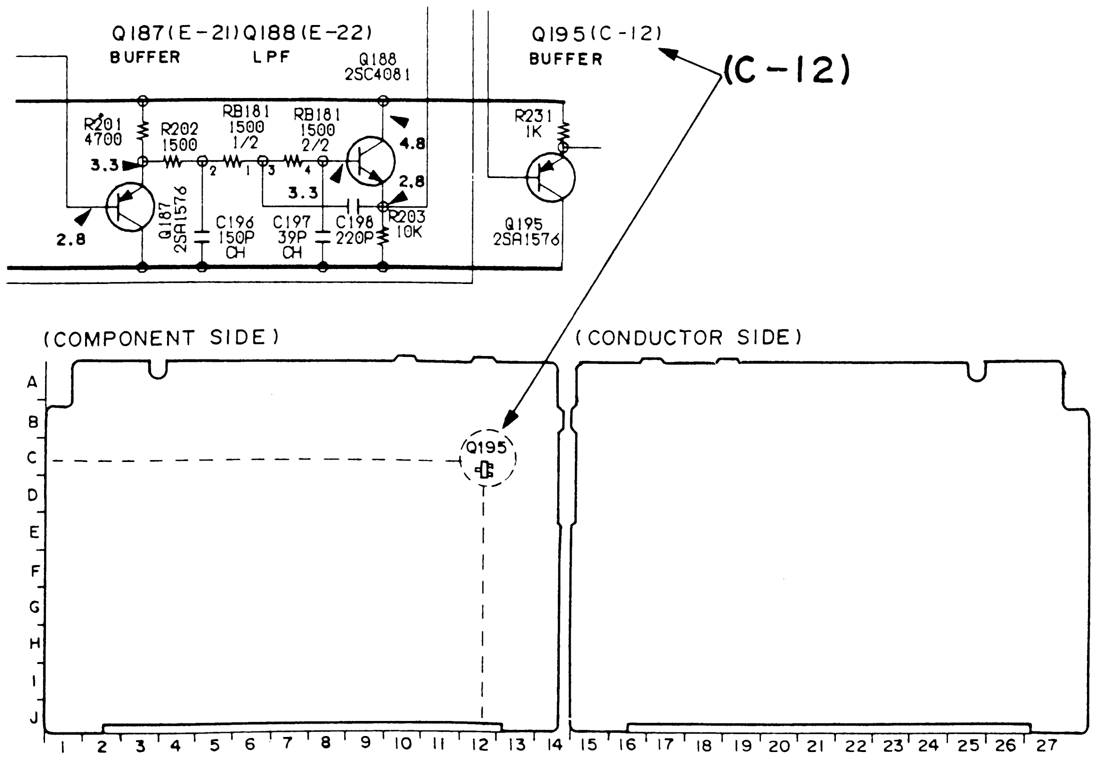
- **For voltage and waveforms. (REC/PB mode)**
- Voltages are dc between ground and measurement points. *
- Readings are taken with a color-bar signal input. *
- Readings are taken with a digital multimeter (DC10MΩ). *
- Voltage variations may be noted due to normal production tolerances. *

Precautions for replacement of CCD imager block.

- With a pair of IC101 (CCD imager) on the CD-20P complete board and IC001 (corrector ROM) on the DT-77P complete board, it is used a repair part of the CCD imager block.
  Since corrector ROM IC is manufactured to match the CCD imager, replacement of a single unit of the CCD imager corrector ROM cannot be allowed.
- When both a CCD imager and the corrector ROM, replace both the CCD imager and the corrector ROM, when a corrector ROM is not mounted on the service set, install a corrector ROM which is supplied anew.
- IC101 (CCD imager) is not mounted on the CD-20P complete board to be supplied as a repair part, and IC001 (corrector ROM) is not mounted on the DT-77P complete board to be supplied as a repair part. When the respective boards are replaced, remove the respective ICs from the old boards and install them to the new once respectively.
- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity.
  For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.

[SEMICONDUCTOR LOCATION]

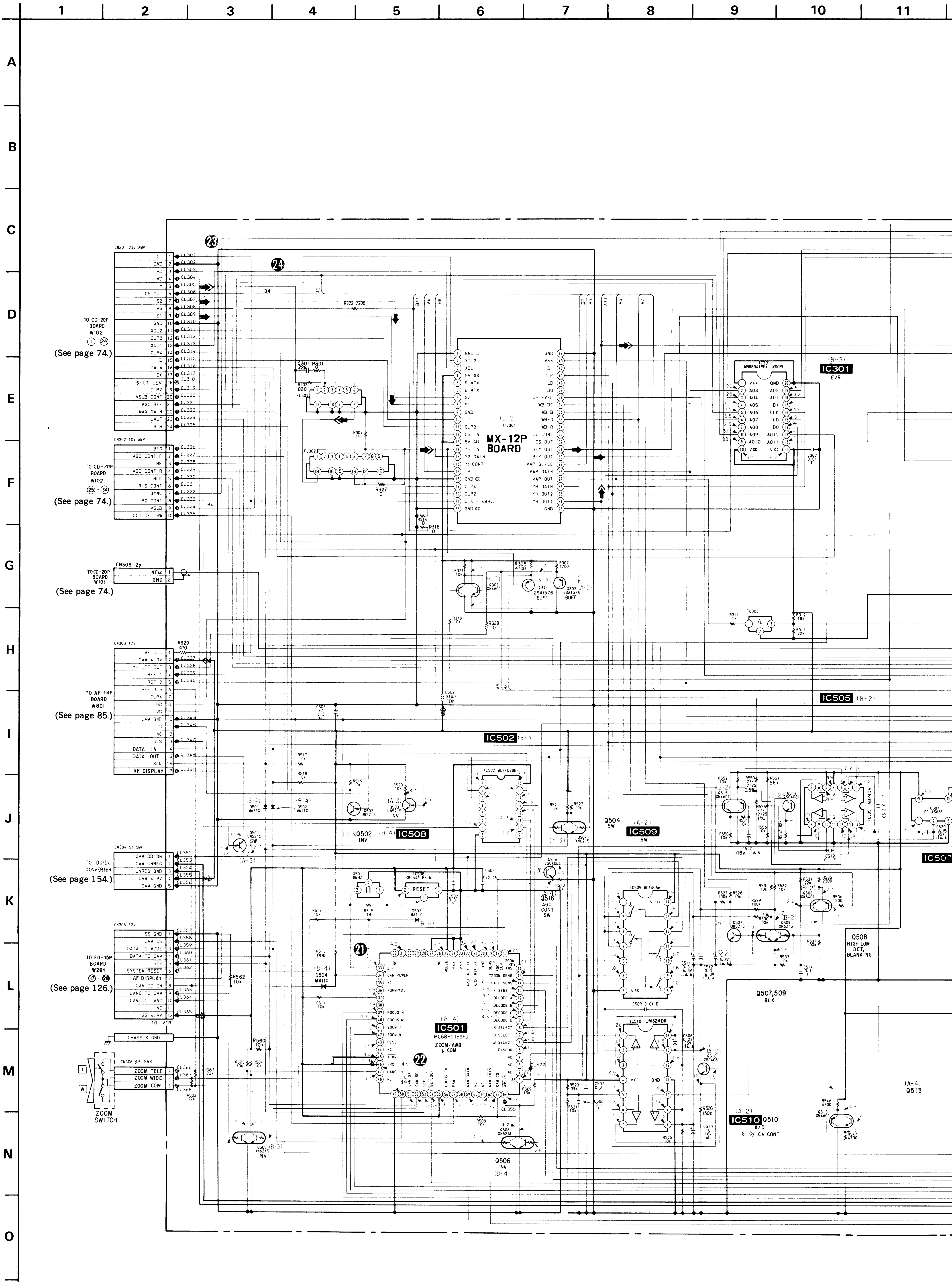
In this service manual, the mounted locations of the semiconductors (IC, transistor, diodes) are indicated in red sa shown below. This enables to find the location on the board easily when servicing.


Q187(E-21)Q188(E-22)
BUFFER
LPF
Q188
2SC4081
R201
4700
R202
1500
RB181
1500
1/2
RB181
1500
2/2
4.8
3.3
2.8
3.3
2.8
Q187
2SA1576
C196
150P
CH
C197
39P
CH
C198
220P
R203
10K
Q195(C-12)
BUFFER
R231
1K
Q195
2SA1576
(C-12)
(COMPONENT SIDE)
(CONDUCTOR SIDE)
Q195
A
B
C
D
E
F
G
H
I
J
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27

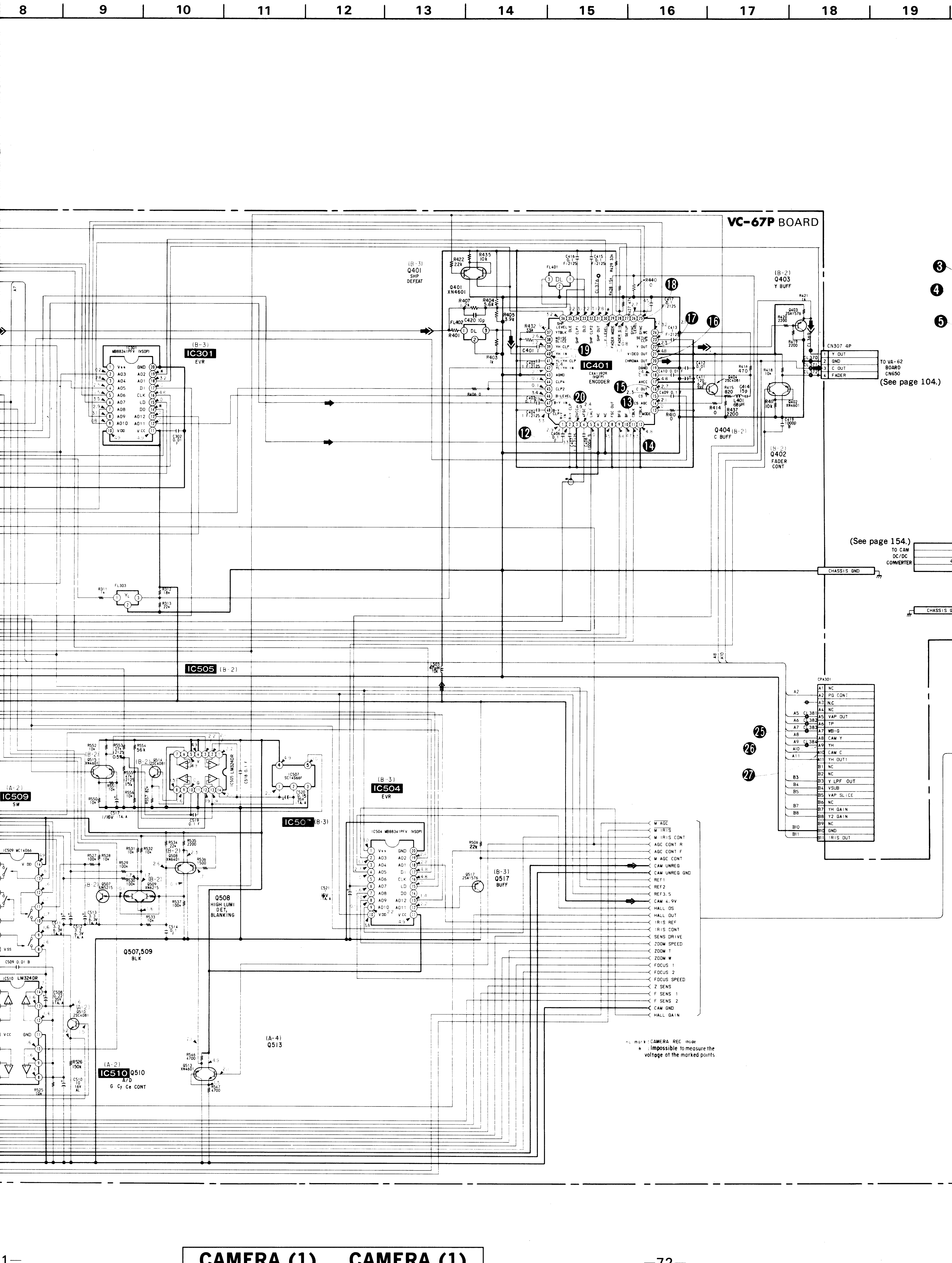
[Semiconductor for Correction List Display]
Part code and part name of the semiconductor for correction of the print board is described in the space of each print figure. Use this list when ordering parts.

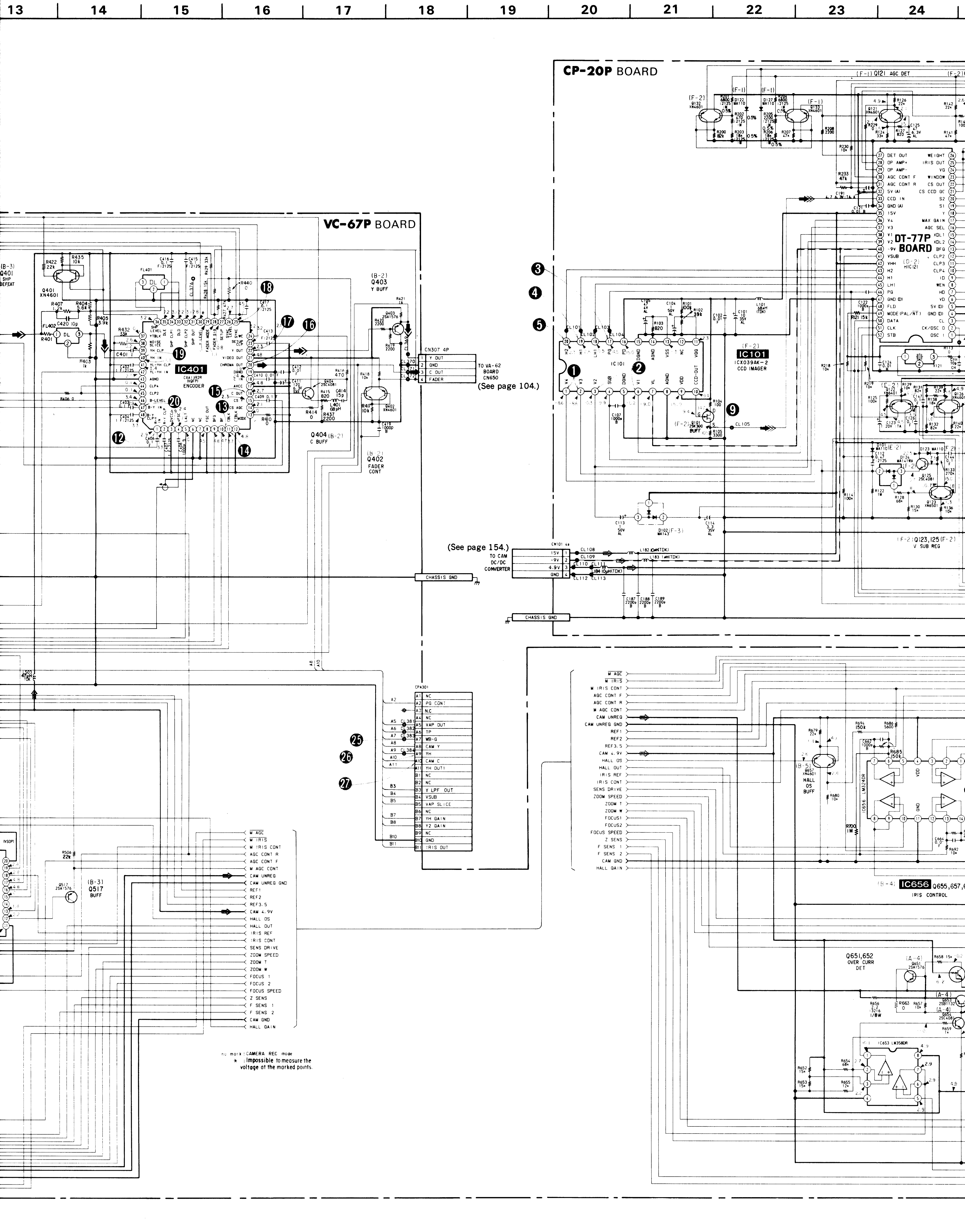
VC-67P (CAMERA PROCESS, ZOOM/FOCUS), CD-20P (CCD IMAGER) SCHEMATIC DIAGRAM

—Ref. No. VC-67P, CD-20P BOARDS : 4000 series—



1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
CN301 24P AMP
CL
GND
HD
VD
Y
CS OUT
S2
VG
S1
GND
XDL2
CLP3
XDL1
CLP4
ID
DATA
CK
SHUT LEV
CLP2
VSUB CONT
AGC REF
MAX GAIN
LALT
STB
TO CD-20P BOARD W102 ①-㉔
(See page 74.)
CN302 10P AMP
BFG
AGC CONT F
BF
AGC CONT R
BLK
IRIS CONT
SYNC
PG CONT
VSUB
CCD DFT SW
TO CD-20P BOARD W102 ㉕-㉞
(See page 74.)
CN308 2P
4Fsc
GND
TO CD-20P BOARD W101
(See page 74.)
CN303 17P
AF CLK
CAM 4.9V
YH LPF OUT
REF 1
REF 2
REF 3.5
CLP4
HD
VD
CAM GND
CS
NC
JCS
DATA IN
DATA OUT
SCK
AF DISPLAY
TO AF-54P BOARD W801
(See page 85.)
CN304 5P SMK
CAM DD ON
CAM UNREG
UNREG GND
CAM 4.9V
CAM GND
TO DC/DC CONVERTER
(See page 154.)
CN305 12P
SS GND
CAM CS
DATA TO MODE
DATA TO CAM
SCK
SYSTEM RESET
AF DISPLAY
CAM DD ON
LANC TO CAM
CAM TO LANC
NC
SS 4.9V
TO VTR
TO FD-15P BOARD W201 ⑰-㉘
(See page 126.)
CHASSIS GND
CN306 3P SMK
ZOOM TELE
ZOOM WIDE
ZOOM COM
T
W
ZOOM SWITCH
㉓
㉔
㉑
㉒
R322 2200
C301 R301
R302 820
FL301
FL302
R304
R327 0
MX-12P BOARD
HIC301
GND (D)
XDL2
XDL1
5V (D)
R MTX
B MTX
S2
S1
GND
ID
CLP3
CS IN
YH IN
Y2 GAIN
Y1 CONT
TP
GND (D)
CLP4
CLP2
CLK (14MHz)
GND (D)
Vss
DI
CLK
LD
DO
C-LEVEL
WB-DC
WB-B
WB-G
WB-R
Ct CONT
CS OUT
R-Y OUT
B-Y OUT
VAP SLICE
VAP GAIN
VAP OUT
YH GAIN
YH OUT2
YH OUT1
R316 0
R325 4700
R307 4700
R321 10k
Q303 XN4601
Q301 2SA1576 BUFF
Q302 2SA1576 BUFF
R318 10k
R328 0
IC301 MB88341PFV (VSOP)
IC301 EVR
Vss
A03
A04
A05
A06
A07
A08
A09
A010
VDD
GND
A02
A01
DI
CLK
LD
DO
A012
A011
VCC
C302 0.01
R311
FL303
YL
R312 18k
R313 22k
R329 470
L502 10μH
C501 47 6.3
IC505 (B-2)
IC502 (B-3)
IC502 MC14028BF
R517 10k
R518 10k
R519 10k
R520 10k
D501 MA110
D502 MA110
Q502 UN5215
Q503 UN5215 INV
Q502 INV
IC508
Q501 UN5215 SW
R521 10k
R522 10k
Q504 XN6215
Q504 SW
IC509 SW
R552 10k
R553 27k
R554 56k
R555 47k
Q515 XN4601
Q514 2SC4081
IC505 LM324DR
Q507 SC14566F
C517 1/16V
C519 0.1
IC507
X501 8MHz
IC508 S805ALB-LW
RESET
C502 0.01
C503 F 2125
Q516 2SC4081
R510 10k
Q516 AGC CONT SW
R514 10k
R515 1M
D503 MA110
IC509 MC14066
VDD
VSS
C509 0.01 B
R527 10k
R528 10k
R529 100k
R531 10k
R532 10k
R534 22k
R535 2200
Q508 XN6401
R536 1500
Q507 UN5215
Q509 XN6215
R537 100k
R533 10k
C513 3.3 6.3V
C514 0.1
Q508 HIGH LUMI DET. BLANKING
Q507,509 BLK
R513 100k
D504 MA110
R562 10k
R511 10k
IC501 MC68HC11E9FU ZOOM/AWB μ COM
CAM POWER
NORM/ADJ
FOCUS N
FOCUS M
ZOOM T
ZOOM W
RESET
MODEL
A/D REF
ZOOM SENS
HALL SENS
F SENS
DECODE A
DECODE B
DECODE C
DECODE D
R SELECT
G SELECT
B SELECT
DISCHG
FOCUS FG
R560 10k
R503 10k
R504 10k
R501 22k
R502 22k
L677
R509 10k
C355
R508 10k
Q506 XN6213
Q506 INV
Q505 XN6215 INV
IC510 LM324DR
VCC
GND
C508 0.33 35V
Q510 2SC4081
R523 3.9k
C507
C506 0.1
R524
R526 150k
C510 10 16V
R525 10k
IC510 A/D
Q510 G Cy Ce CONT
Q513
R546 4700
Q513 XN4601
R547 4700

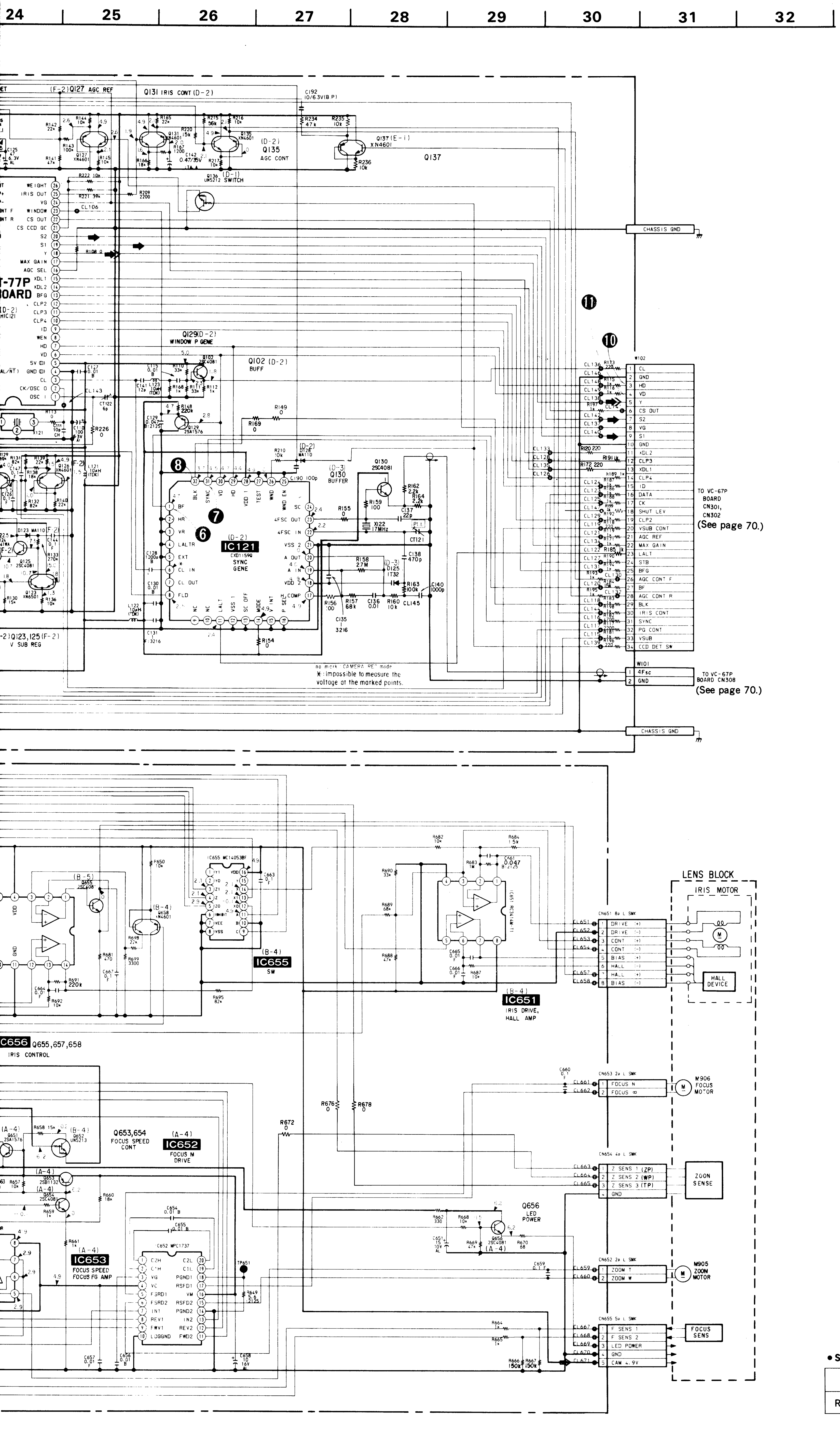

8
9
10
11
12
13
14
15
16
17
18
19
VC-67P BOARD
(B-3) IC301 EVR
IC301 MB88341PFV (VSOP)
(B-3) Q401 SHP DEFEAT
Q401 XN4601
FL401 DL
FL402 DL
IC401 CXA1392R (VQFP) ENCODER
(B-2) Q403 Y BUFF
Q403 2SA1576
Q404 2SC4081
Q404 (B-2) C BUFF
(B-2) Q402 FADER CONT
Q402 XN4601
L401 68μH
CN307 4P
1 Y OUT
2 GND
3 C OUT
4 FADER
TO VA-62 BOARD CN650
(See page 104.)
(See page 154.)
TO CAM DC/DC CONVERTER
CHASSIS GND
FL303 YL
IC505 (B-2)
IC505 LM324DR
CP4301
A1 NC
A2 PG CONT
A3 NC
A4 NC
A5 VAP OUT
A6 TP
A7 WB-G
A8 CAM Y
A9 YH
A10 CAM C
A11 YH OUT1
B1 NC
B2 NC
B3 Y LPF OUT
B4 VSUB
B5 VAP SLICE
B6 NC
B7 YH GAIN
B8 Y2 GAIN
B9 NC
B10 GND
B11 IRIS OUT
(A-2) IC509 SW
IC509 MC14066
IC510 LM324DR
(A-2) IC510 A/D G Cy Ce CONT
Q510
(A-2) Q510 2SC4081
IC507 SC14S66F
IC507 (B-3)
(B-3) IC504 EVR
IC504 MB88341PFV (VSOP)
(B-3) Q517 BUFF
Q517 2SA1576
Q508 HIGH LUMI DET, BLANKING
Q507,509 BLK
(A-4) Q513
Q513 XN4601
Q515 XN4601
Q514 2SC4081
Q507 UN5215
Q509 XN6215
Q508 XN6401
M AGC
M IRIS
M IRIS CONT
AGC CONT R
AGC CONT F
M AGC CONT
CAM UNREG
CAM UNREG GND
REF1
REF2
REF3.5
CAM 4.9V
HALL OS
HALL OUT
IRIS REF
IRIS CONT
SENS DRIVE
ZOOM SPEED
ZOOM T
ZOOM W
FOCUS 1
FOCUS 2
FOCUS SPEED
Z SENS
F SENS 1
F SENS 2
CAM GND
HALL GAIN
❸
❹
❺
⓬
⓭
⓮
⓯
⓰
⓱
⓲
⓳
⓴
㉕
㉖
㉗
: CAMERA REC mode
* : Impossible to measure the voltage at the marked points



13
14
15
16
17
18
19
20
21
22
23
24
VC-67P BOARD
CP-20P BOARD
IC401
CXA1392R
ENCODER
Q401
XN4601
(B-2) Q403 Y BUFF
Q404 (B-2) C BUFF
(B-2) Q402 FADER CONT
CN307 4P
Y OUT
GND
C OUT
FADER
TO VA-62 BOARD CN650
(See page 104.)
CHASSIS GND
IC101
ICX039AK-2
CCD IMAGER
(F-2) Q101 2SK300 BUFF
DT-77P BOARD
(D-2) HIC121
(F-1) Q121 AGC DET
(F-2) Q123,125 (F-2) V SUB REG
(See page 154.)
TO CAM DC/DC CONVERTER
CN101 4P
15V
-9V
4.9V
GND
CPA301
NC
PG CONT
VAP OUT
TP
WB-G
CAM Y
YH
CAM C
YH OUT1
Y LPF OUT
VSUB
VAP SLICE
YH GAIN
Y2 GAIN
IRIS OUT
M AGC
M IRIS
M IRIS CONT
AGC CONT F
AGC CONT R
M AGC CONT
CAM UNREG
CAM UNREG GND
REF1
REF2
REF3.5
CAM 4.9V
HALL OS
HALL OUT
IRIS REF
IRIS CONT
SENS DRIVE
ZOOM SPEED
ZOOM T
ZOOM W
FOCUS1
FOCUS2
FOCUS SPEED
Z SENS
F SENS 1
F SENS 2
CAM GND
HALL GAIN
(B-3) Q517 2SA1576 BUFF
(B-5) Q657 XN4601 HALL OS BUFF
(B-4) IC656 Q655,657
IRIS CONTROL
Q651,652 OVER CURR DET
IC653 LM358DR

no mark : CAMERA REC mode
* : Impossible to measure the voltage at the marked points.

RA (1)


24
25
26
27
28
29
30
31
32
Q127 AGC REF
Q131 IRIS CONT (D-2)
Q135 AGC CONT
Q136 UN5212 SWITCH
Q137 (E-1) XN4601
Q137
CHASSIS GND
Q129 (D-2) WINDOW P GENE
Q102 (D-2) BUFF
Q130 2SC4081 BUFFER
IC121 CXD1159Q SYNC GENE
X122 17MHz
TO VC-67P BOARD CN301, CN302
(See page 70.)
TO VC-67P BOARD CN308
(See page 70.)
no mark : CAMERA REC mode
✻ : impossible to measure the voltage at the marked points.
Q123,125 (F-2) V SUB REG
IC655 MC14053BF
IC655 SW
IC651 IRIS DRIVE, HALL AMP
IC656 Q655,657,658 IRIS CONTROL
LENS BLOCK
IRIS MOTOR
HALL DEVICE
M906 FOCUS MOTOR
ZOOM SENSE
Q656 LED POWER
M905 ZOOM MOTOR
FOCUS SENS
Q653,654 FOCUS SPEED CONT
IC652 FOCUS M DRIVE
IC653 FOCUS SPEED FOCUS FG AMP
IC652 MPC1737
CN651 8p L SMK
CN653 2p L SMK
CN654 4p L SMK
CN652 2p L SMK
CN655 5p L SMK

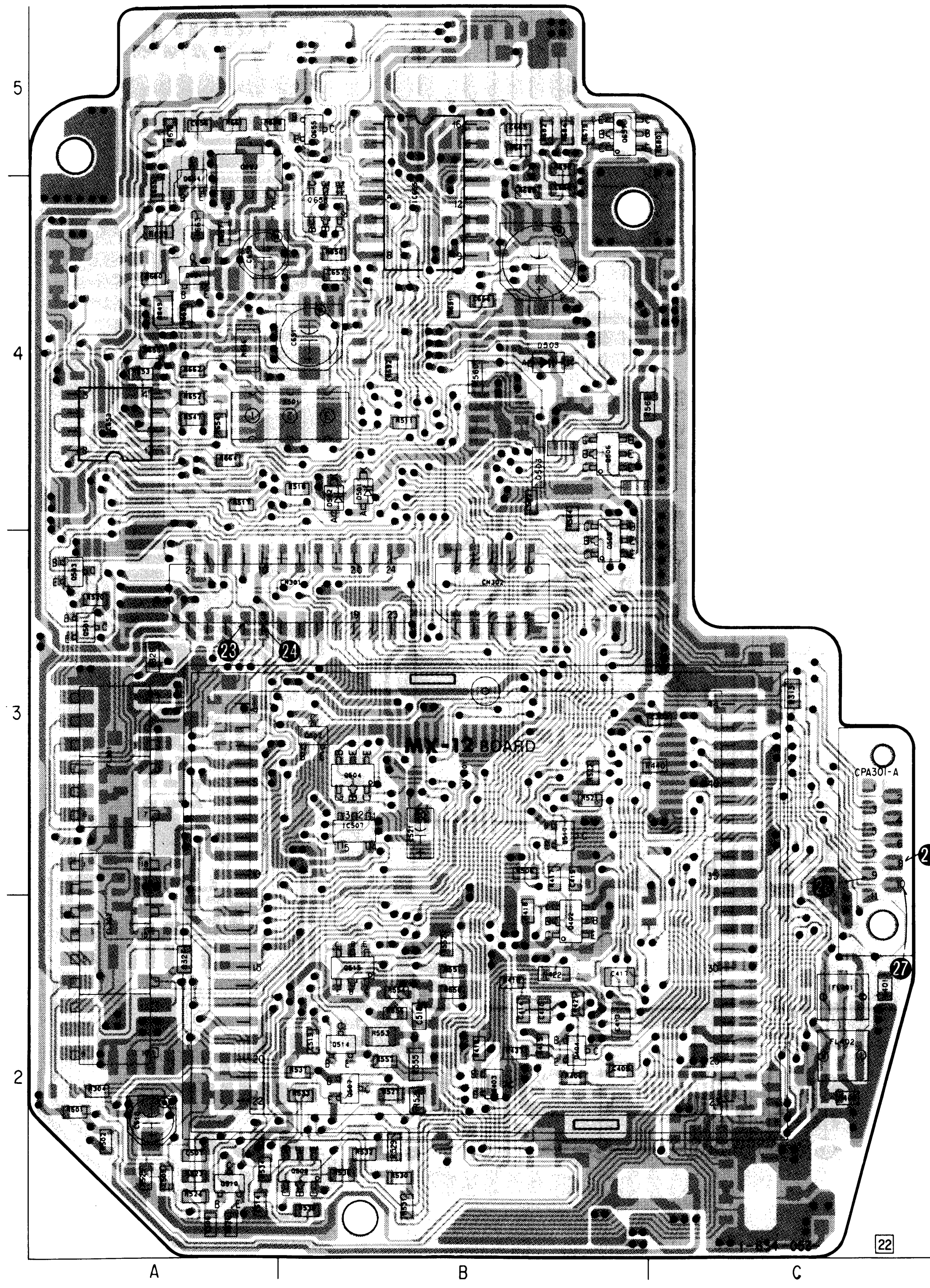
• **Signal path**

	VIDEO Signal		
	CHROMA	Y	Y/CHROMA
REC	➡	⇒	⇛

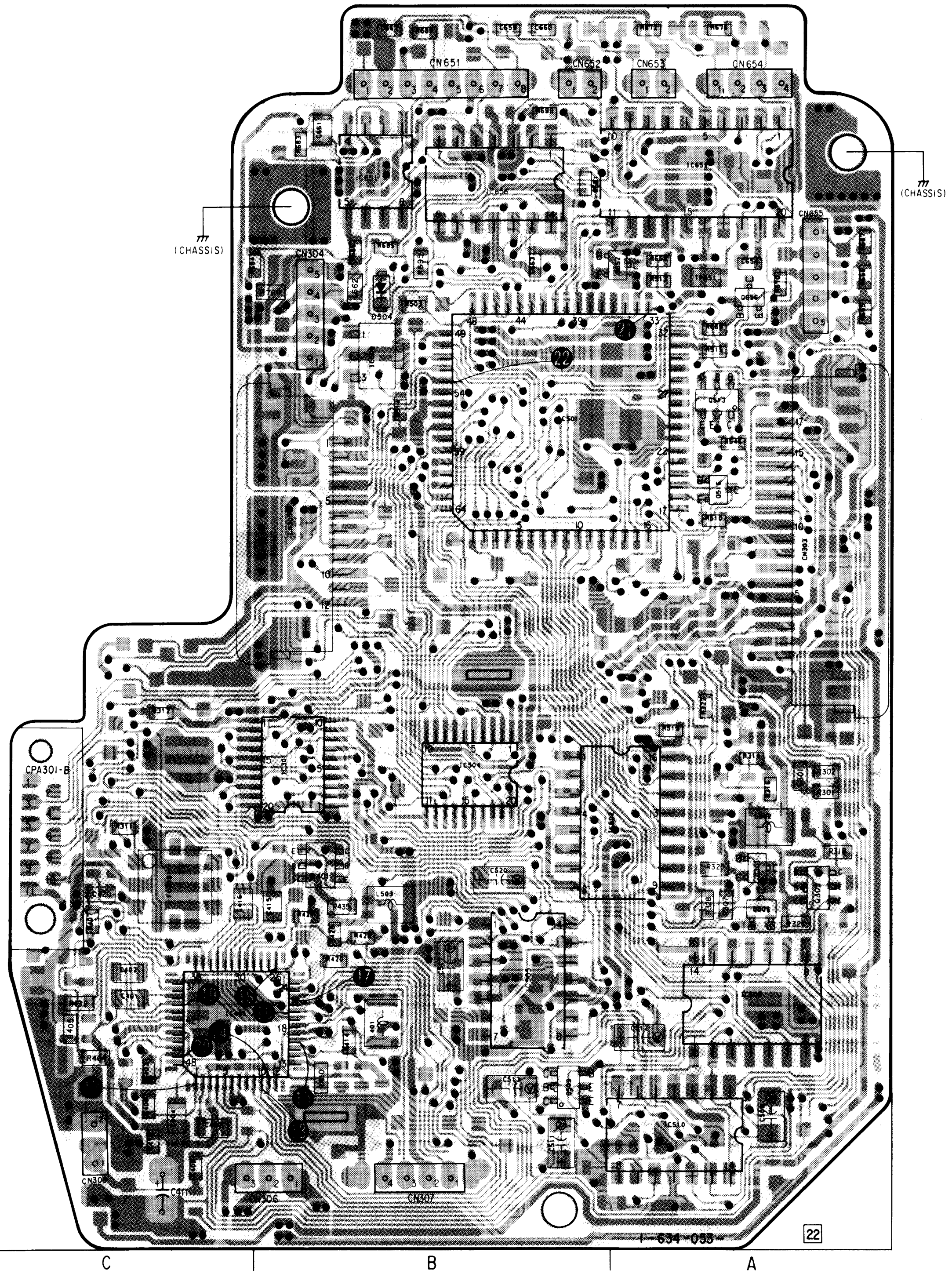
VC-67P (CAMERA PROCESS, ZOOM/FOCUS), CD-20P (CCD IMAGER) PRINTED WIRING BOARD

—Ref. No. VC-67P, CD-20P BOARDS : 4000 series—

VC-67P BOARD (COMPONENT SIDE)



VC-67P BOARD (CONDUCTOR SIDE)



DIODE

D501	8-719-404-46	DIODE MA110
D502	8-719-404-46	DIODE MA110
D503	8-719-404-46	DIODE MA110
D504	8-719-404-46	DIODE MA110

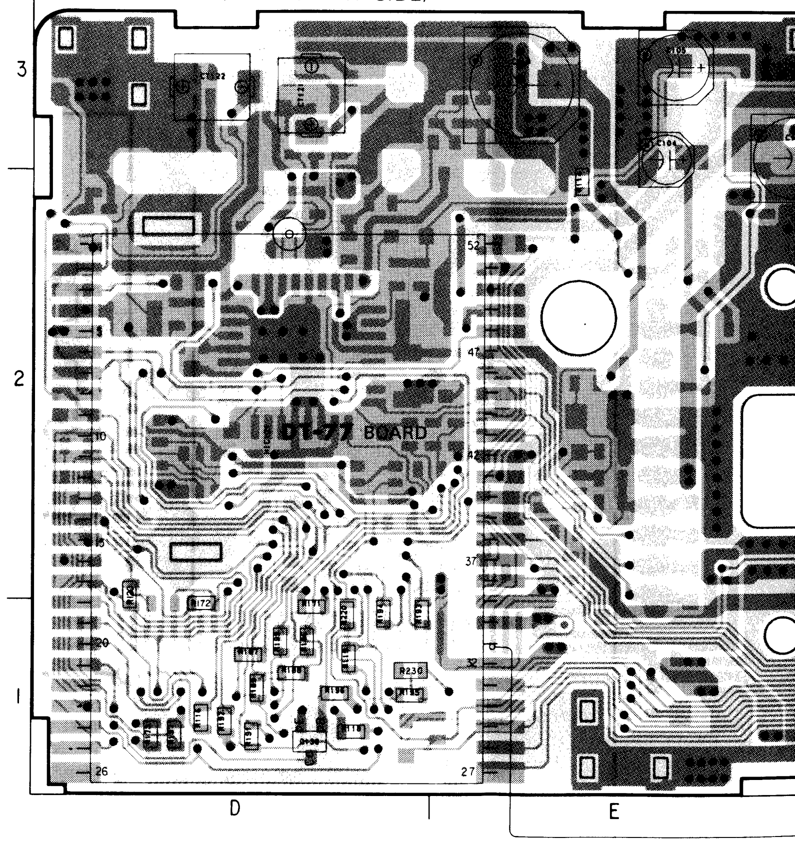
IC

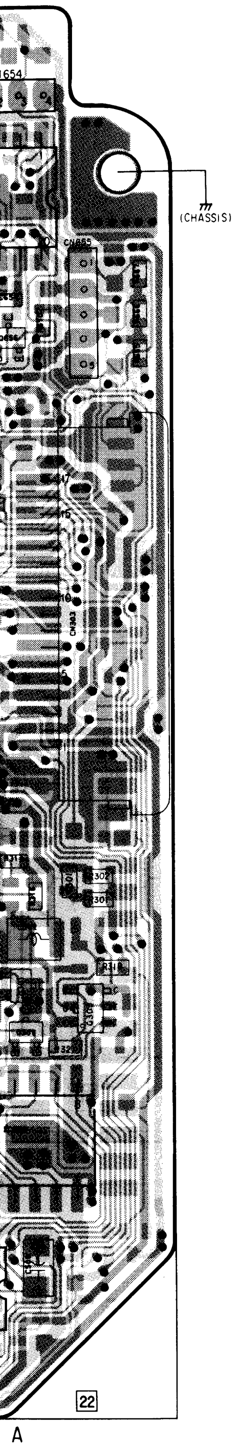
IC301	8-759-946-00	IC MB88341PFV
IC401	8-752-038-XX	IC CXA1392R
IC501	8-759-037-46	IC MC68HC11E9FU
IC502	8-759-008-95	IC MC14028BF
IC504	8-759-946-00	IC MB88341PFV
IC505	8-759-998-96	IC LM324D
IC507	8-759-030-74	IC SC14S66F
IC508	8-759-937-56	IC S-8054ALB-LM-S
IC509	8-759-932-54	IC MC14066BF
IC510	8-759-998-96	IC LM324D
IC651	8-759-981-82	IC RC3414M
IC652	8-759-037-20	IC MPC1737MR
IC653	8-759-998-98	IC LM358D
IC655	8-759-009-07	IC MC14053BF
IC656	8-759-998-96	IC LM324D

TRANSISTOR

Q301	8-729-905-23	TRANSISTOR 2
Q302	8-729-905-23	TRANSISTOR 2
Q303	8-729-402-84	TRANSISTOR X
Q401	8-729-402-84	TRANSISTOR X
Q402	8-729-402-84	TRANSISTOR X
Q403	8-729-905-23	TRANSISTOR 2
Q404	8-729-905-35	TRANSISTOR 2
Q501	8-729-420-50	TRANSISTOR U
Q502	8-729-420-50	TRANSISTOR U
Q503	8-729-420-50	TRANSISTOR U
Q504	8-729-403-10	TRANSISTOR X
Q505	8-729-403-10	TRANSISTOR X
Q506	8-729-420-07	TRANSISTOR X
Q507	8-729-420-50	TRANSISTOR U
Q508	8-729-402-78	TRANSISTOR X
Q509	8-729-403-10	TRANSISTOR X
Q510	8-729-905-35	TRANSISTOR 2
Q513	8-729-402-84	TRANSISTOR X
Q514	8-729-905-35	TRANSISTOR 2
Q515	8-729-402-84	TRANSISTOR X
Q516	8-729-905-35	TRANSISTOR 2
Q517	8-729-905-23	TRANSISTOR 2
Q651	8-729-905-23	TRANSISTOR 2
Q652	8-729-402-42	TRANSISTOR U
Q653	8-729-920-79	TRANSISTOR 2
Q654	8-729-905-35	TRANSISTOR 2
Q655	8-729-905-35	TRANSISTOR 2
Q656	8-729-905-35	TRANSISTOR 2
Q657	8-729-402-84	TRANSISTOR X
Q658	8-729-402-84	TRANSISTOR X

CD-20P BOARD (COMPONENT SIDE)





DIODE

D501	8-719-404-46	DIODE MA110
D502	8-719-404-46	DIODE MA110
D503	8-719-404-46	DIODE MA110
D504	8-719-404-46	DIODE MA110

IC

IC301	8-759-946-00	IC MB88341PFV
IC401	8-752-038-XX	IC CXA1392R
IC501	8-759-037-46	IC MC68HC11E9FU
IC502	8-759-008-95	IC MC14028BF
IC504	8-759-946-00	IC MB88341PFV
IC505	8-759-998-96	IC LM324D
IC507	8-759-030-74	IC SC14S66F
IC508	8-759-937-56	IC S-8054ALB-LM-S
IC509	8-759-932-54	IC MC14066BF
IC510	8-759-998-96	IC LM324D
IC651	8-759-981-82	IC RC3414M
IC652	8-759-037-20	IC MPC1737MR
IC653	8-759-998-98	IC LM358D
IC655	8-759-009-07	IC MC14053BF
IC656	8-759-998-96	IC LM324D

TRANSISTOR

Q301	8-729-905-23	TRANSISTOR 2SA1576-R
Q302	8-729-905-23	TRANSISTOR 2SA1576-R
Q303	8-729-402-84	TRANSISTOR XN4601
Q401	8-729-402-84	TRANSISTOR XN4601
Q402	8-729-402-84	TRANSISTOR XN4601
Q403	8-729-905-23	TRANSISTOR 2SA1576-R
Q404	8-729-905-35	TRANSISTOR 2SC4081-R
Q501	8-729-420-50	TRANSISTOR UN5215
Q502	8-729-420-50	TRANSISTOR UN5215
Q503	8-729-420-50	TRANSISTOR UN5215
Q504	8-729-403-10	TRANSISTOR XN6215
Q505	8-729-403-10	TRANSISTOR XN6215
Q506	8-729-420-07	TRANSISTOR XN6213
Q507	8-729-420-50	TRANSISTOR UN5215
Q508	8-729-402-78	TRANSISTOR XN6401
Q509	8-729-403-10	TRANSISTOR XN6215
Q510	8-729-905-35	TRANSISTOR 2SC4081-R
Q513	8-729-402-84	TRANSISTOR XN4601
Q514	8-729-905-35	TRANSISTOR 2SC4081-R
Q515	8-729-402-84	TRANSISTOR XN4601
Q516	8-729-905-35	TRANSISTOR 2SC4081
Q517	8-729-905-23	TRANSISTOR 2SA1576
Q651	8-729-905-23	TRANSISTOR 2SA1576
Q652	8-729-402-42	TRANSISTOR UN5213
Q653	8-729-920-79	TRANSISTOR 2SB1132-QR
Q654	8-729-905-35	TRANSISTOR 2SC4081-R
Q655	8-729-905-35	TRANSISTOR 2SC4081-R
Q656	8-729-905-35	TRANSISTOR 2SC4081-R
Q657	8-729-402-84	TRANSISTOR XN4601
Q658	8-729-402-84	TRANSISTOR XN4601

DIODE

D101	8-719-404-46	DIODE MA110
D102	8-719-404-52	DIODE MA143
D122	8-719-404-46	DIODE MA110
D123	8-719-404-46	DIODE MA110
D124	8-719-404-32	DIODE MA141WA
D125	8-719-949-46	DIODE 1T32
D127	8-719-404-46	DIODE MA110
D128	8-719-404-46	DIODE MA110

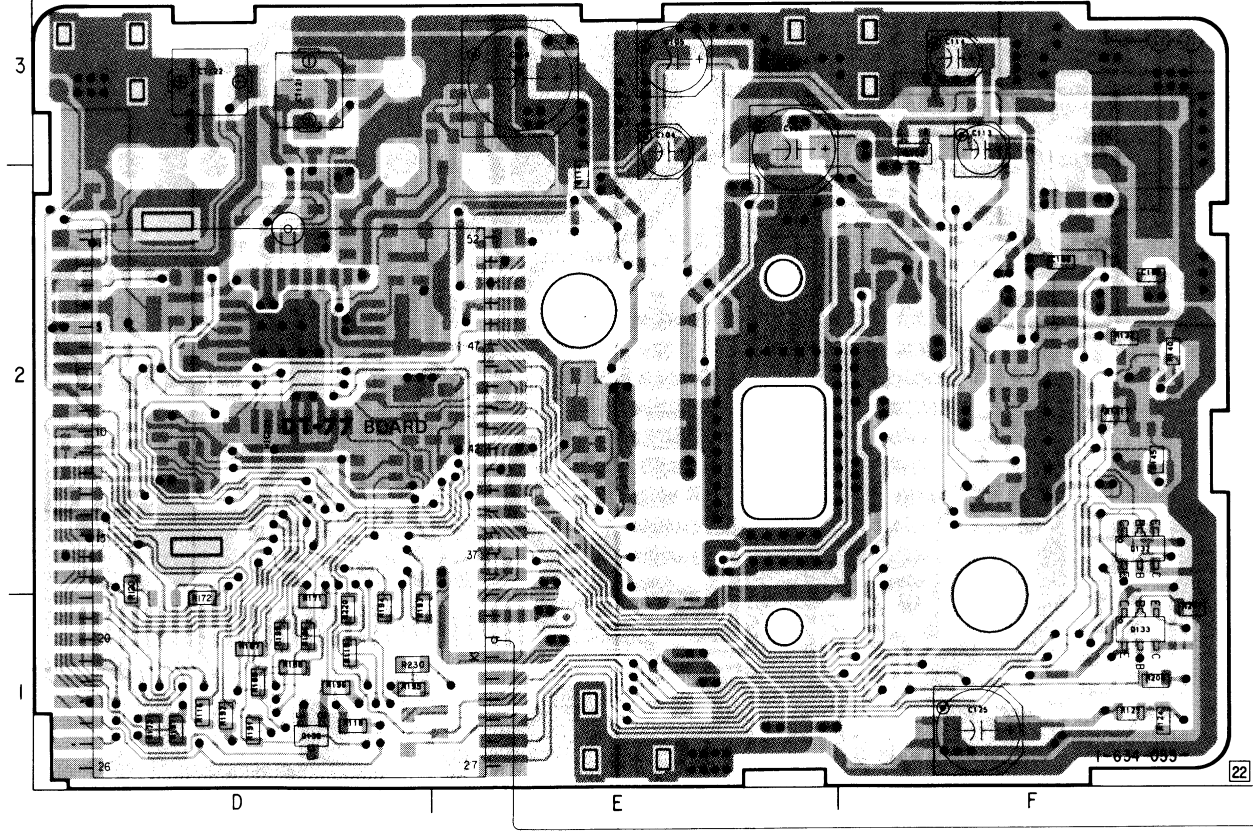
IC

IC121	8-752-326-08	IC CXD1159Q

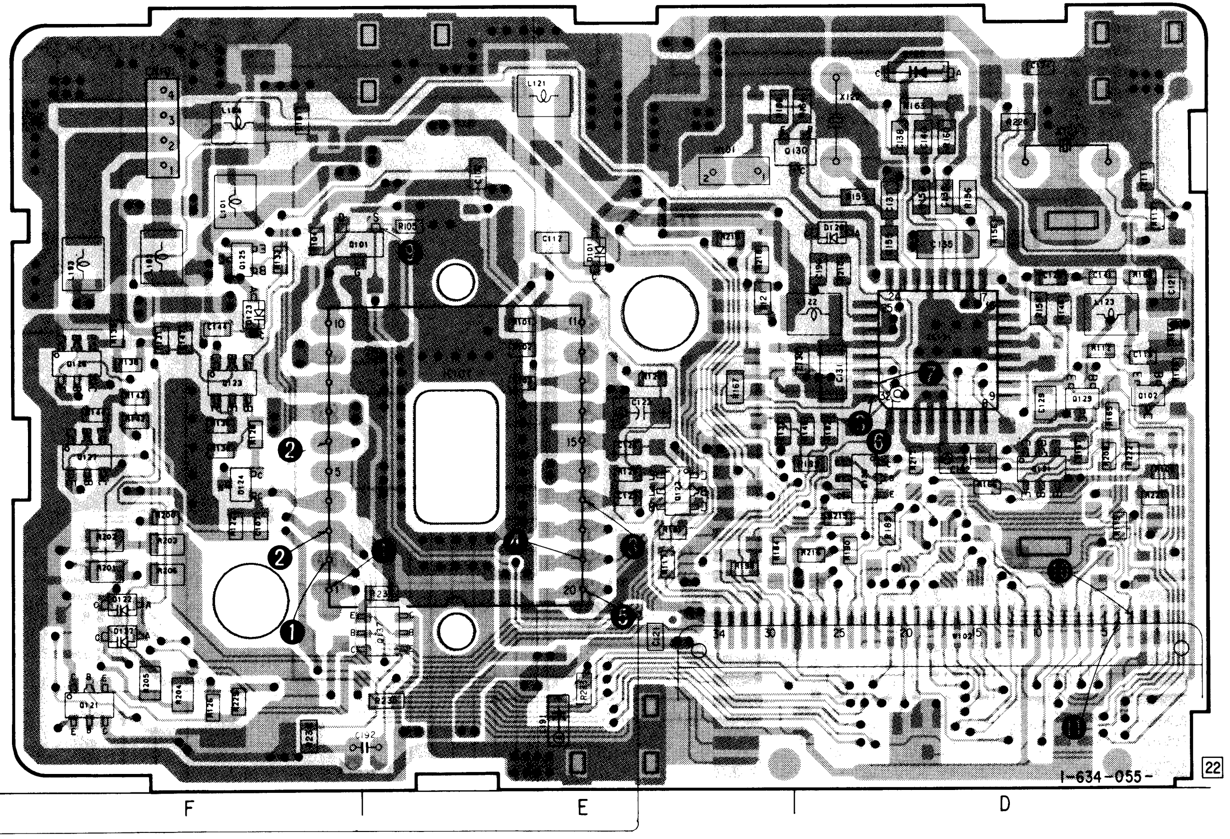
TRANSISTOR

Q101	8-765-420-02	TRANSISTOR 2SK300-3
Q102	8-729-905-35	TRANSISTOR 2SC4081-R
Q121	8-729-402-84	TRANSISTOR XN4601
Q122	8-729-402-78	TRANSISTOR XN6401
Q123	8-729-402-19	TRANSISTOR XN6501
Q125	8-729-905-35	TRANSISTOR 2SC4081-R
Q126	8-729-402-84	TRANSISTOR XN4601
Q127	8-729-402-84	TRANSISTOR XN4601
Q129	8-729-905-23	TRANSISTOR 2SA1576-R
Q130	8-729-905-35	TRANSISTOR 2SC4081-R
Q131	8-729-402-84	TRANSISTOR XN4601
Q132	8-729-402-84	TRANSISTOR XN4601
Q133	8-729-402-84	TRANSISTOR XN4601
Q135	8-729-402-84	TRANSISTOR XN4601
Q136	8-729-402-45	TRANSISTOR UN5212
Q137	8-729-402-84	TRANSISTOR XN4601

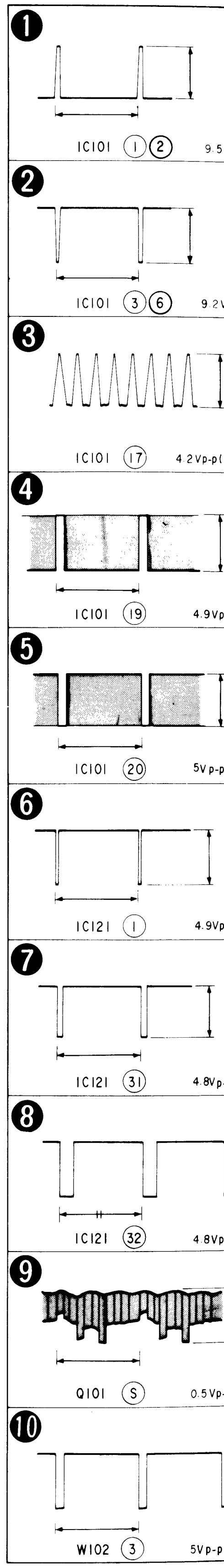
CD-20P BOARD (COMPONENT SIDE)



CD-20P BOARD (CONDUCTOR SIDE)



CD-20P BOARD



DIODE

D101	8-719-404-46	DIODE MA110
D102	8-719-404-52	DIODE MA143
D122	8-719-404-46	DIODE MA110
D123	8-719-404-46	DIODE MA110
D124	8-719-404-32	DIODE MA141WA
D125	8-719-949-46	DIODE 1T32
D127	8-719-404-46	DIODE MA110
D128	8-719-404-46	DIODE MA110

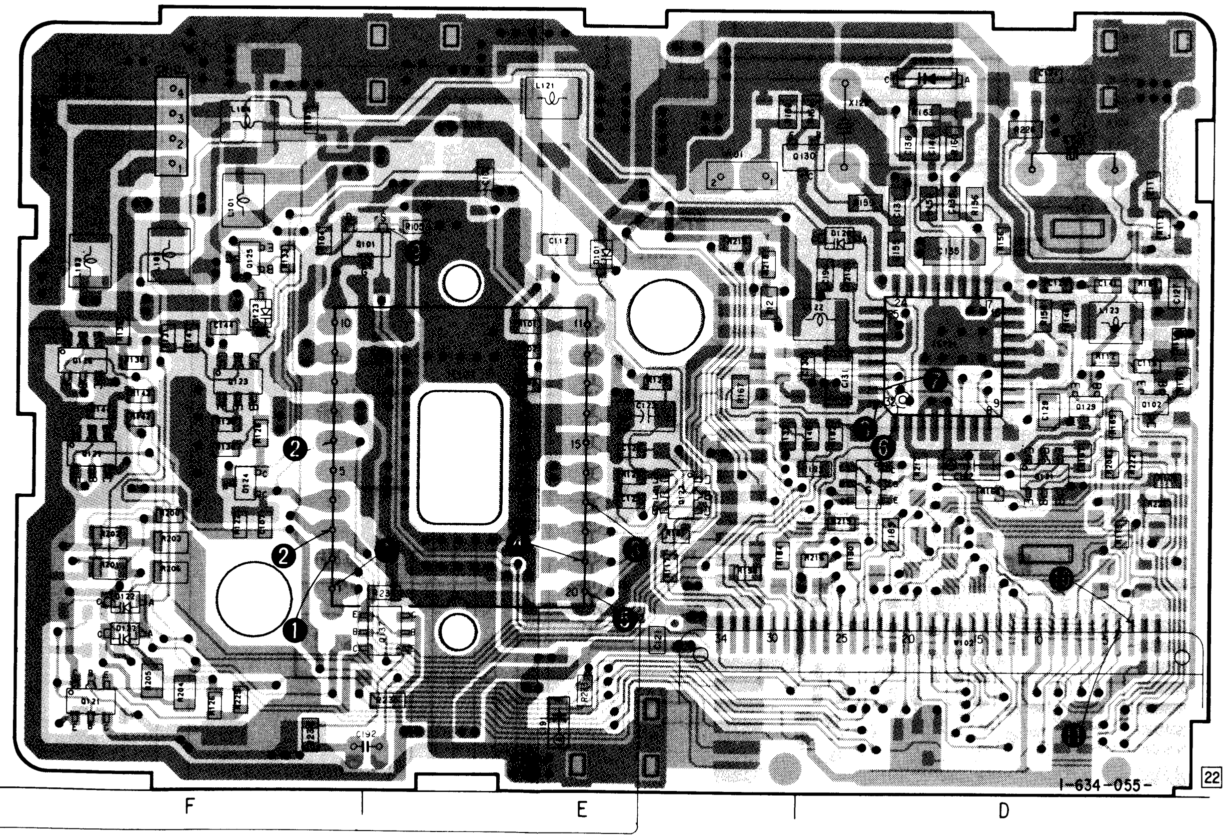
IC

IC121	8-752-326-08	IC CXD1159Q

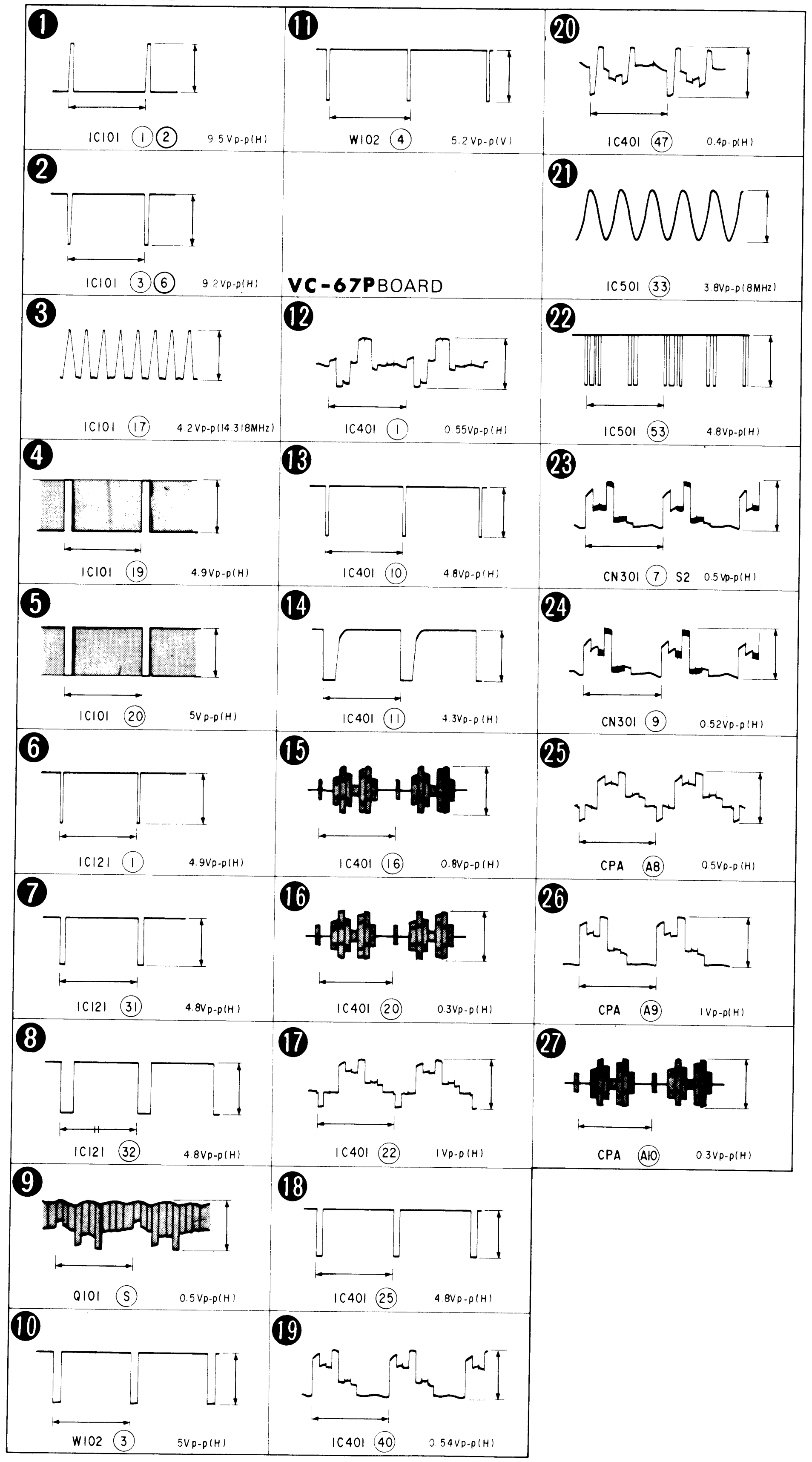
TRANSISTOR

Q101	8-765-420-02	TRANSISTOR 2SK300-3
Q102	8-729-905-35	TRANSISTOR 2SC4081-R
Q121	8-729-402-84	TRANSISTOR XN4601
Q122	8-729-402-78	TRANSISTOR XN6401
Q123	8-729-402-19	TRANSISTOR XN6501
Q125	8-729-905-35	TRANSISTOR 2SC4081-R
Q126	8-729-402-84	TRANSISTOR XN4601
Q127	8-729-402-84	TRANSISTOR XN4601
Q129	8-729-905-23	TRANSISTOR 2SA1576-R
Q130	8-729-905-35	TRANSISTOR 2SC4081-R
Q131	8-729-402-84	TRANSISTOR XN4601
Q132	8-729-402-84	TRANSISTOR XN4601
Q133	8-729-402-84	TRANSISTOR XN4601
Q135	8-729-402-84	TRANSISTOR XN4601
Q136	8-729-402-45	TRANSISTOR UN5212
Q137	8-729-402-84	TRANSISTOR XN4601

CD-20P BOARD (CONDUCTOR SIDE)



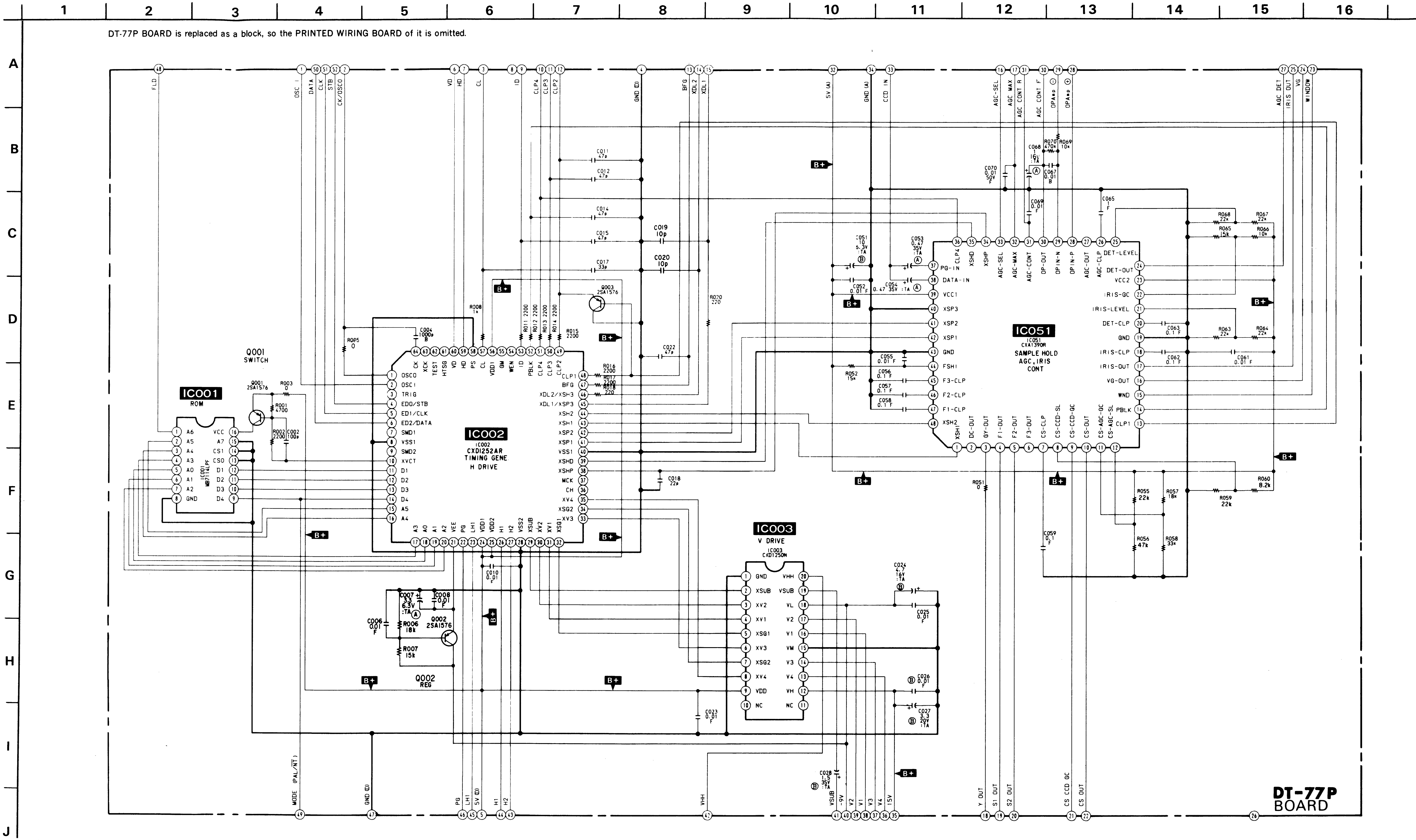
CD-20P BOARD



Be sure to always read "Precautions for replacement of CCD imager block" in page 69 when replacing the CD-20P board, complete, DT-77P board, complete and CCD imager block (IC101 on the CD-20P board and IC001 on the DT-77P board).

DT-77P (TIMING GENERATOR, CCD DRIVE), MX-12P (CAMERA MATRIX) SCHEMATIC DIAGRAMS

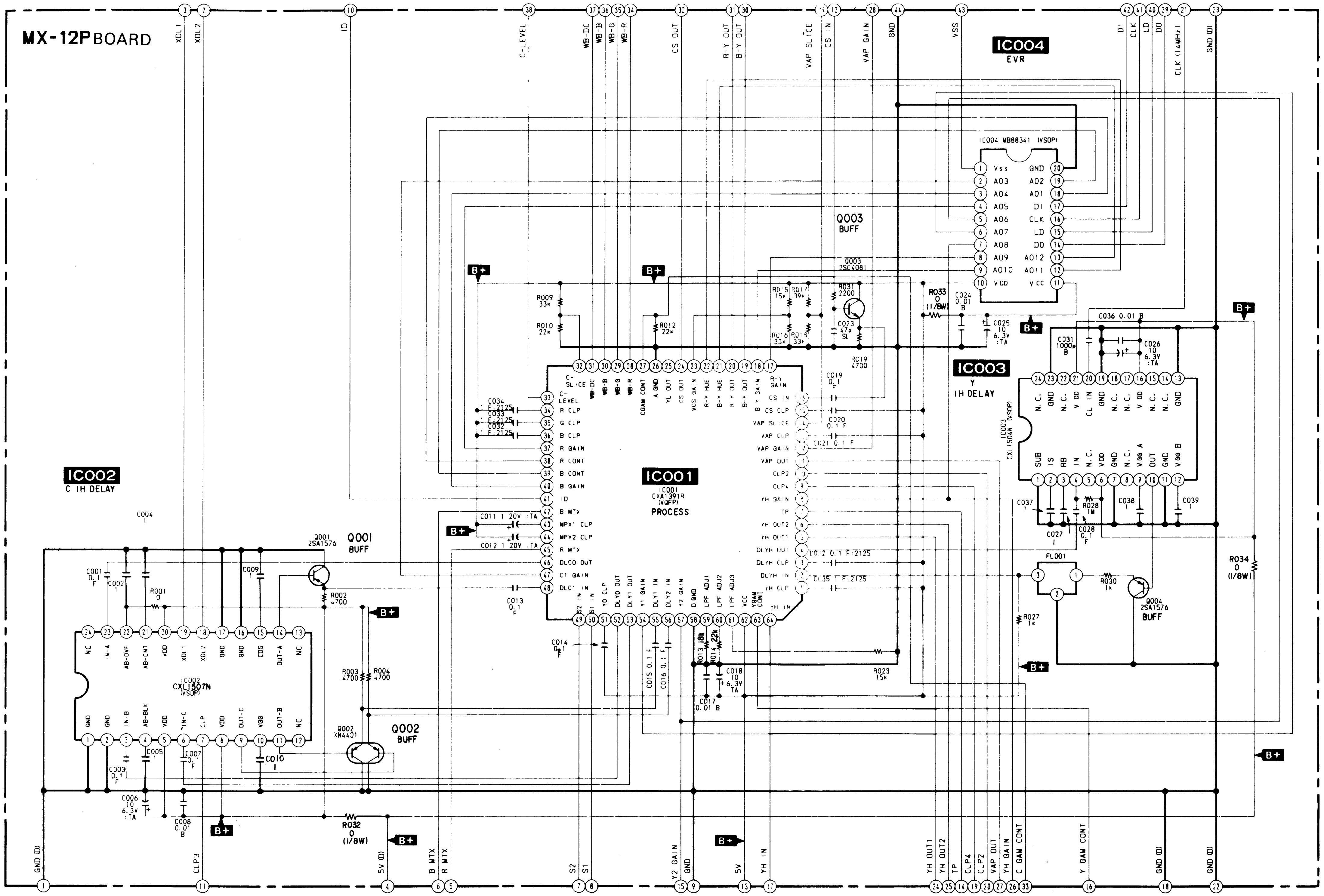
DT-77P BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.



IC001
ROM
IC001 MB7114LPF
Q001
SWITCH
Q001 2SA1576
IC002
IC002
CXD1252AR
TIMING GENE
H DRIVE
Q002
REG
Q002 2SA1576
Q003 2SA1576
IC003
V DRIVE
IC003 CXD1250N
IC051
IC051 CXA1390R
SAMPLE HOLD
AGC, IRIS
CONT
B+
DT-77P
BOARD

17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30

MX-12P BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.

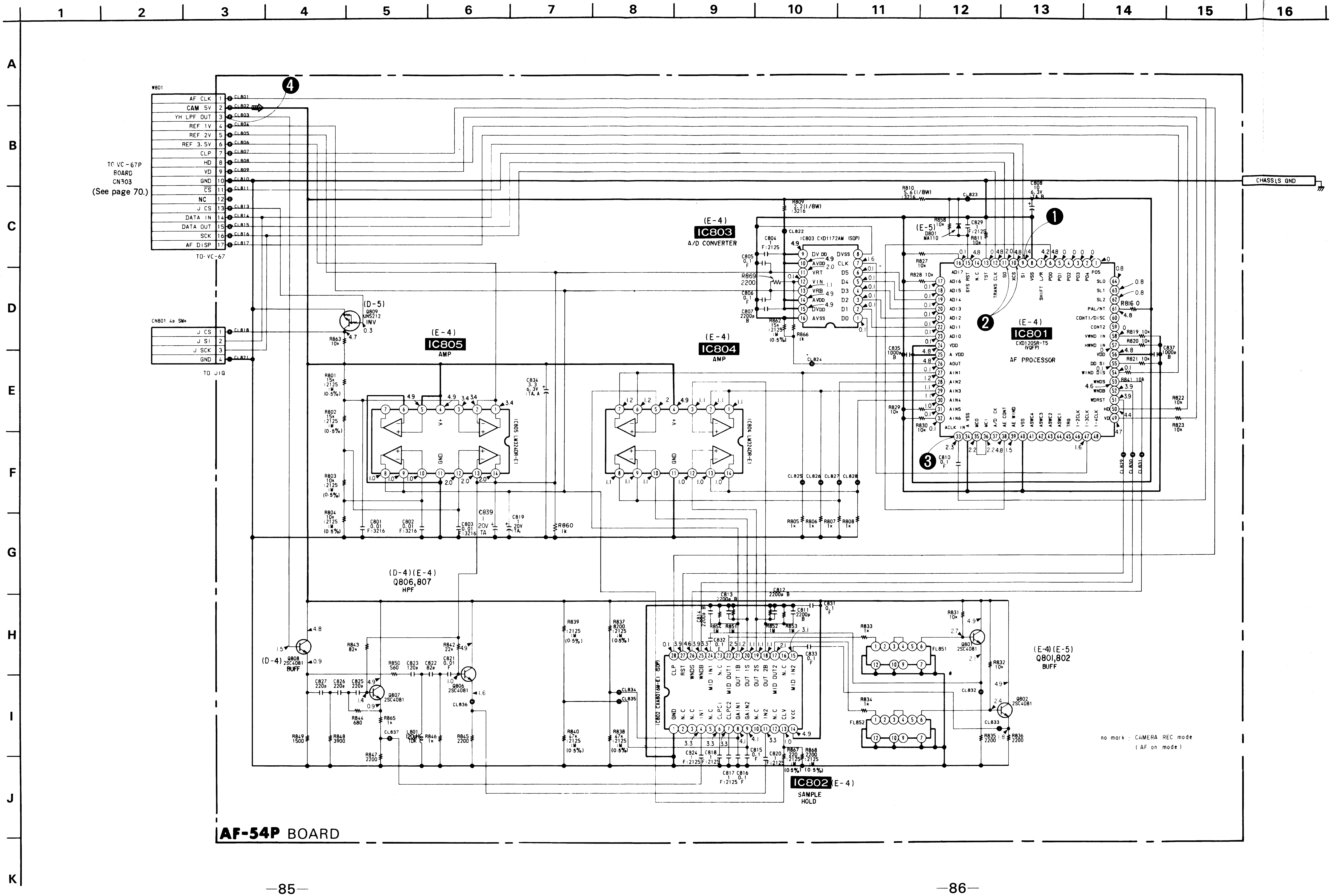


MX-12P BOARD
IC001
CXA1391R (VQFP)
PROCESS
IC002
C 1H DELAY
CXL1507N (VSOP)
IC003
Y 1H DELAY
CXL1504M (VSOP)
IC004
EVR
MB88341 (VSOP)
Q001 2SA1576 BUFF
Q002 XN4401 BUFF
Q003 2SC4081 BUFF
Q004 2SA1576 BUFF
FL001
B+
XDL1
XDL2
ID
C-LEVEL
WB-DC
WB-B
WB-G
WB-R
CS OUT
R-Y OUT
B-Y OUT
VAP SLICE
CS IN
VAP GAIN
GND
VSS
DI
CLK
LD
DO
CLK (14MHz)
GND (D)
GND (D)
CLP3
5V (D)
B MTX
R MTX
S2
S1
Y2 GAIN
GND
5V
YH IN
YH OUT1
YH OUT2
TP
CLP4
CLP2
VAP OUT
YH GAIN
C GAM CONT
Y GAM CONT
GND (D)
GND (D)
R032 0 (1/8W)
R034 0 (1/8W)
R033 0 (1/8W)

CAMERA (2) CAMERA (2)

AF-54P (AUTO FOCUS) SCHEMATIC DIAGRAM

—Ref. No. AF-54P BOARD : 3000 series—



1
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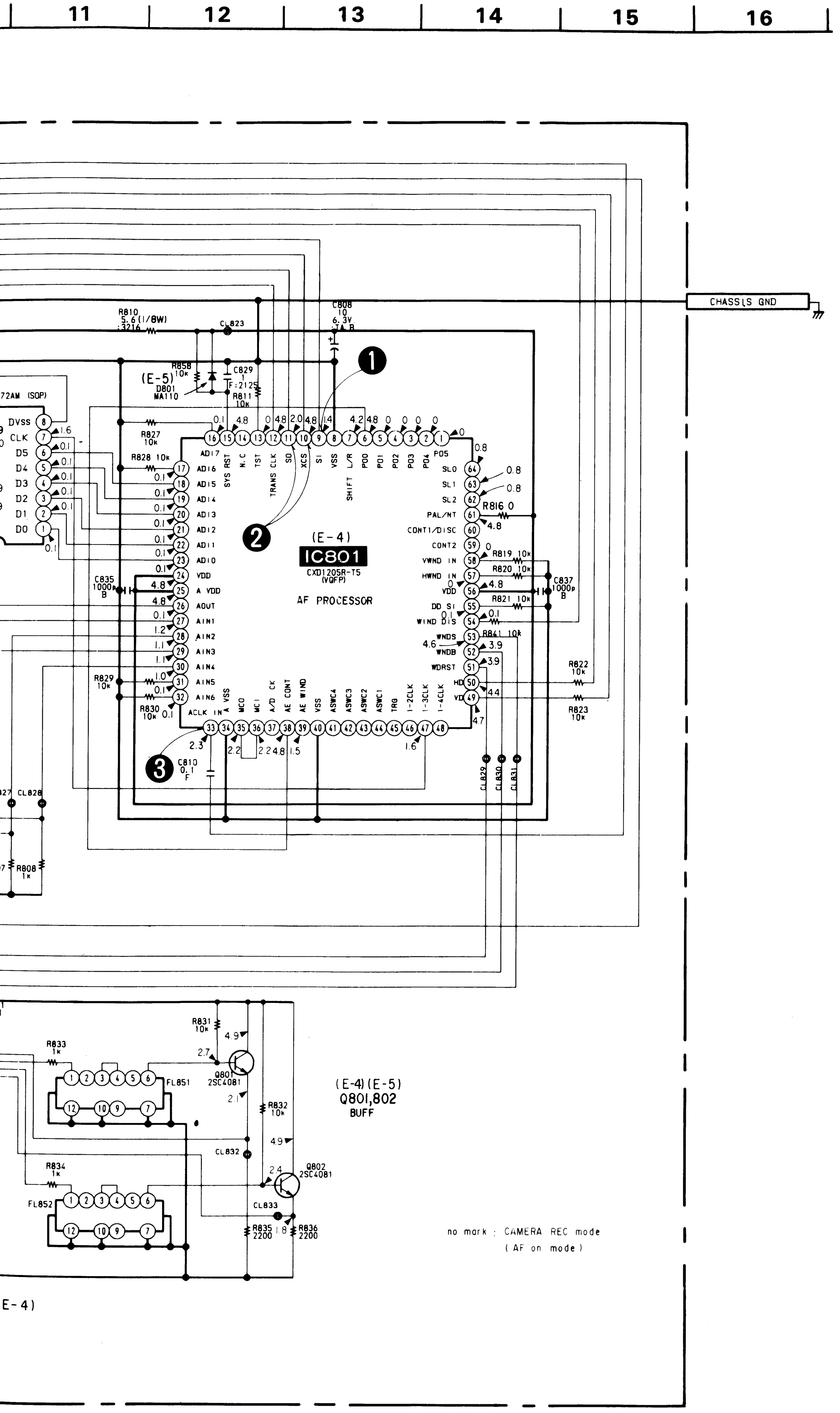
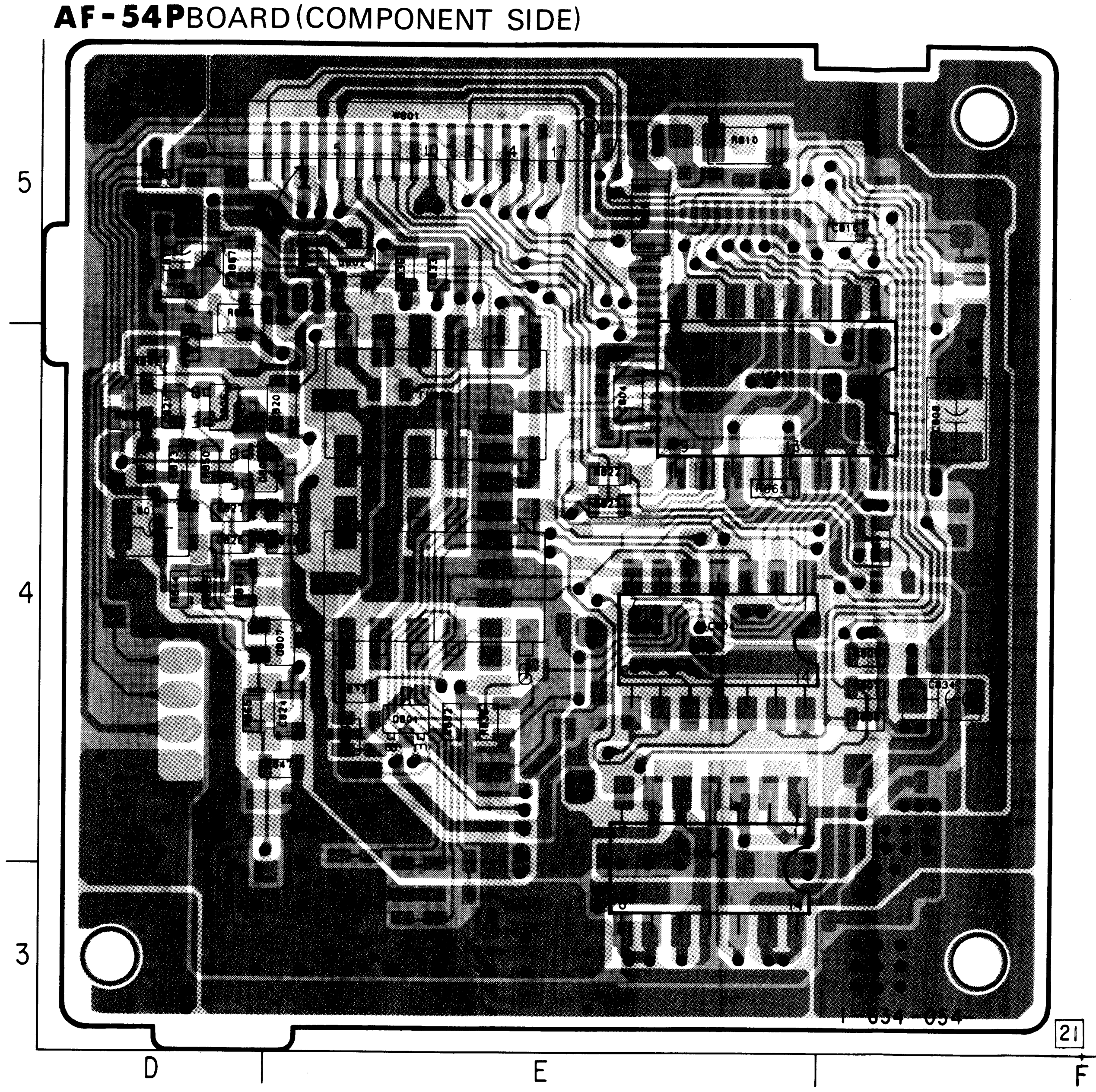
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
W801
AF CLK
CAM 5V
YH LPF OUT
REF 1V
REF 2V
REF 3.5V
CLP
HD
VD
GND
CS
NC
J CS
DATA IN
DATA OUT
SCK
AF DISP
TO VC-67P BOARD CN303 (See page 70.)
TO VC-67
CN801 4P SM
J CS
J SI
J SCK
GND
TO JIG
CHASSIS GND
(D-5) Q809 UN5212 INV
(E-4) IC805 AMP
IC805 LM324DR-E1
(E-4) IC804 AMP
IC804 LM324DR-E1
(E-4) IC803 A/D CONVERTER
IC803 CXD1172AM (SOP)
(E-5) D801 MA110
(E-4) IC801 CXD1205R-T5 (VQFP) AF PROCESSOR
(D-4)(E-4) Q806,807 HPF
(D-4) Q808 2SC4081 BUFF
Q807 2SC4081
Q806 2SC4081
IC802 CXA1016M-E1 (SOP)
IC802 (E-4) SAMPLE HOLD
(E-4)(E-5) Q801,802 BUFF
Q801 2SC4081
Q802 2SC4081
FL851
FL852
no mark : CAMERA REC mode (AF on mode)
AF-54P BOARD


11
12
13
14
15
16
CHASSIS GND
R810 5.6(1/8W) 3216
CL823
C808 10 6.3V TA,B
R858 10k
(E-5)
D801 MA110
C829 F:2125
R811 10k
72AM (SOP)
DVSS
CLK
D5
D4
D3
D2
D1
D0
R827 10k
R828 10k
IC801
(E-4)
CXD1205R-T5 (VQFP)
AF PROCESSOR
SYS RST
N.C
TST
TRANS CLK
SO
XCS
SI
VSS
SHIFT L/R
PO0
PO1
PO2
PO3
PO4
POS
SLO
SL1
SL2
PAL/NT
CONT1/DISC
CONT2
VWND IN
HWND IN
VDD
DD SI
WIND DIS
WNDS
WHDB
WDRST
HD
VD
AD17
AD16
AD15
AD14
AD13
AD12
AD11
AD10
VDD
A VDD
AOUT
AIN1
AIN2
AIN3
AIN4
AIN5
AIN6
ACLK IN
A VSS
MCO
MCI
A/D CK
AE CONT
AE WIND
VSS
ASWC4
ASWC3
ASWC2
ASWC1
TRG
1-2CLK
1-3CLK
1-4CLK
R816 0
R819 10k
R820 10k
R821 10k
R841 10k
C837 1000p B
C835 1000p B
R829 10k
R830 10k
R822 10k
R823 10k
C810 0.1 F
CL829
CL830
CL831
CL827
CL828
R808 1k
R831 10k
R833 1k
FL851
Q801 2SC4081
R832 10k
CL832
R834 1k
FL852
Q802 2SC4081
CL833
R835 2200
R836 2200
(E-4)(E-5)
Q801,802
BUFF
no mark : CAMERA REC mode
(AF on mode)
(E-4)

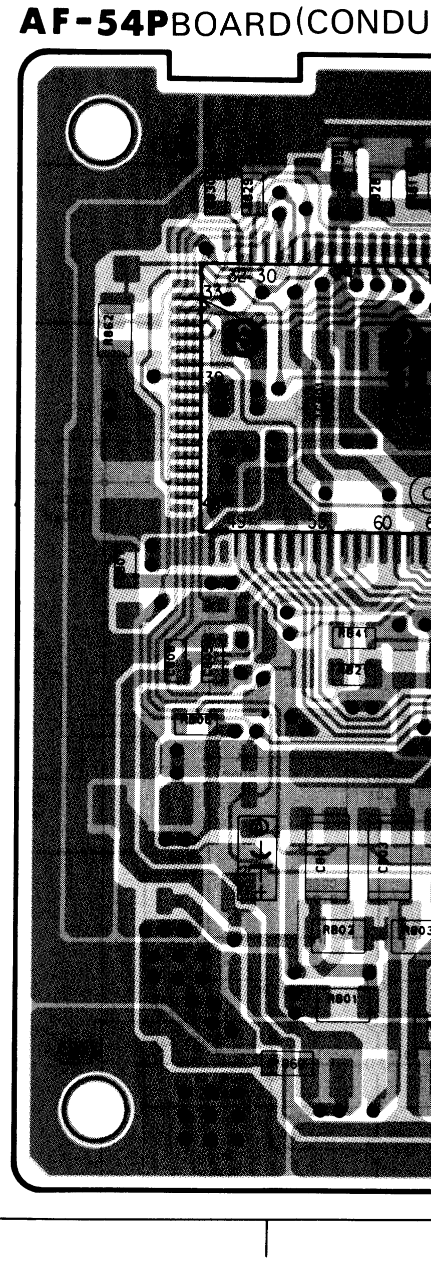
AF-54P (AUTO FOCUS) PRINTED WIRING BOARD

—Ref. No. AF-54P BOARD: 3000 series—



AF-54PBOARD(COMPONENT SIDE)

5
4
3
D
E
F
21
1-634-054



AF-54PBOARD(CONDU

DIODE

D801	8-719-404-46	DIODE MA110

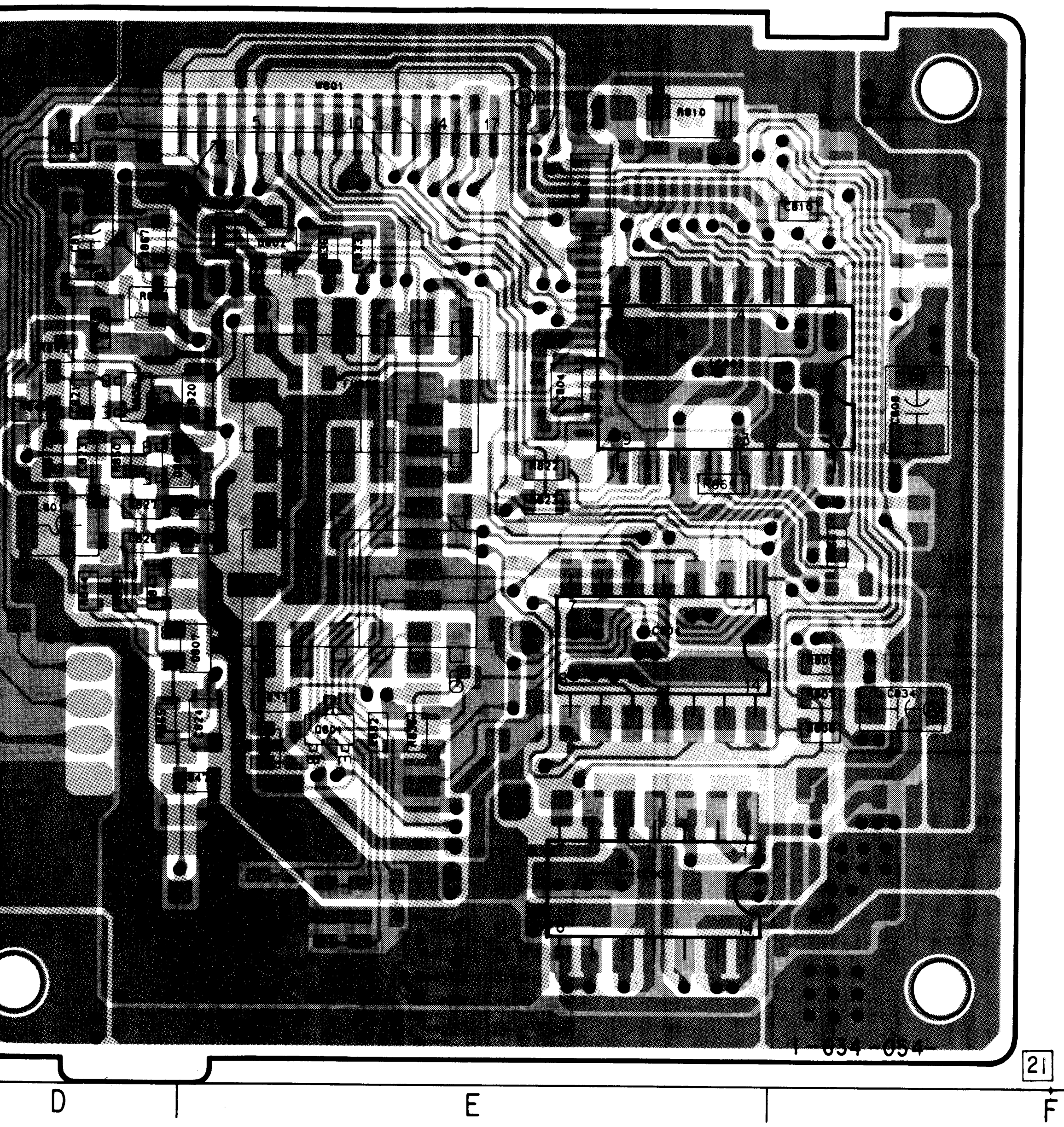
IC

IC801	8-752-334-68	IC CXD1205R
IC802	8-759-148-87	IC CXA8016M
IC803	8-752-334-49	IC CXD1172AM
IC804	8-759-998-96	IC LM324DR
IC805	8-759-998-96	IC LM324DR

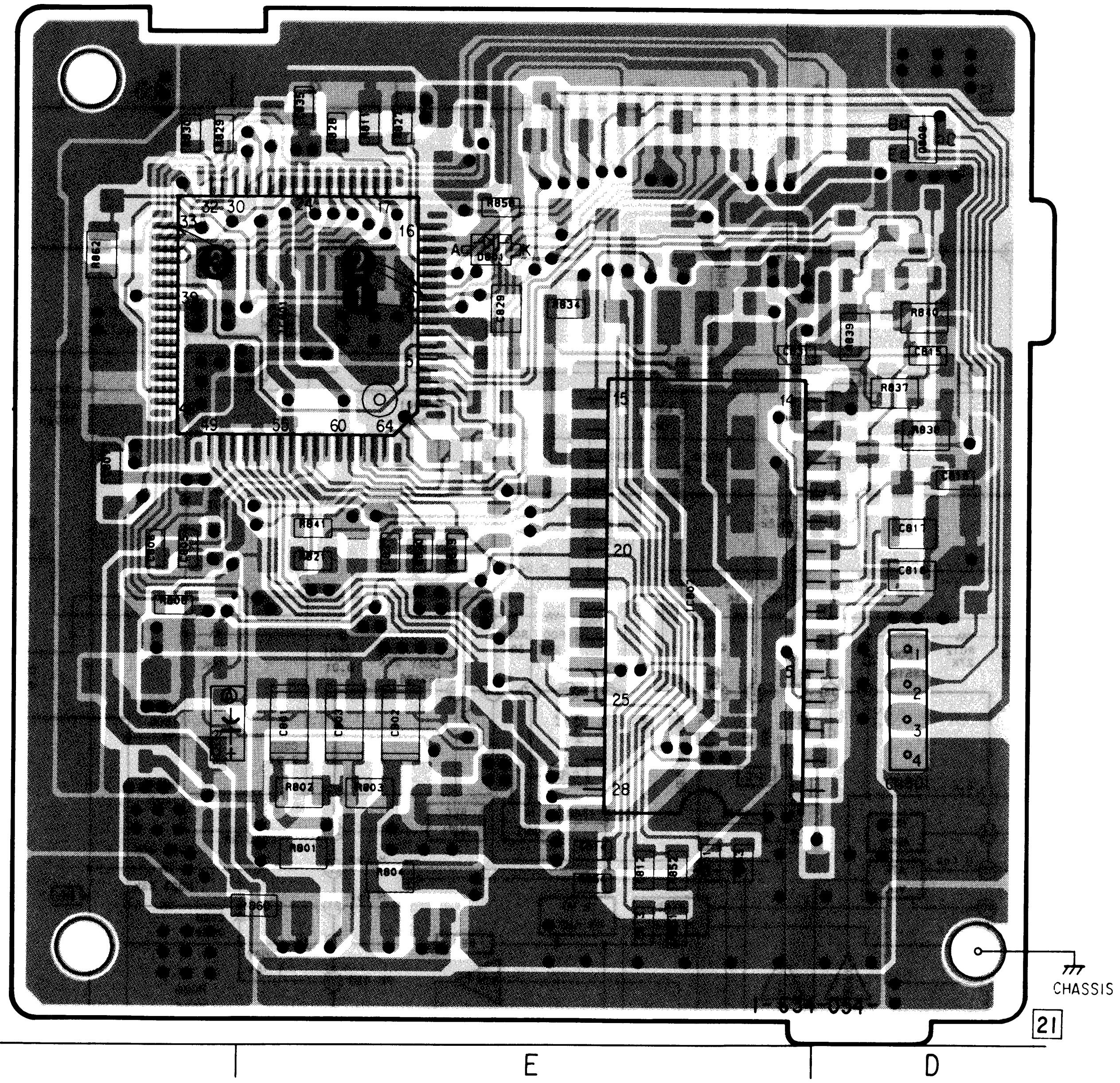
TRANSISTOR

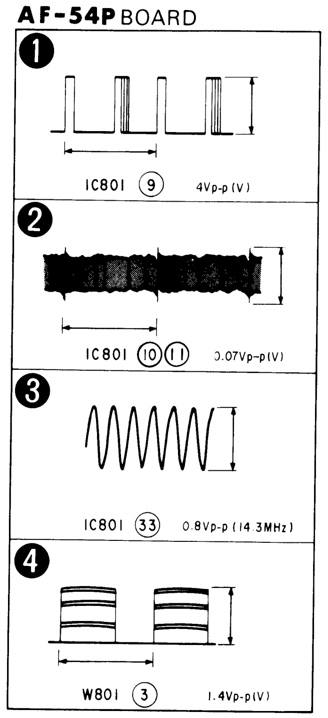
Q801	8-729-905-35	TRANSISTOR 2SC4081-R
Q802	8-729-905-35	TRANSISTOR 2SC4081-R
Q806	8-729-905-35	TRANSISTOR 2SC4081-R
Q807	8-729-905-35	TRANSISTOR 2SC4081-R
Q808	8-729-905-35	TRANSISTOR 2SC4081-R
Q809	8-729-402-45	TRANSISTOR UN5212

-54PBOARD(COMPONENT SIDE)


W801
1-634-054-
21
D
E
F

AF-54PBOARD(CONDUCTOR SIDE)


IC801
CHASSIS
1-634-054-
21
E
D


AF-54P BOARD
❶
IC801 ⑨ 4Vp-p (V)
❷
IC801 ⑩⑪ 0.07Vp-p(V)
❸
IC801 ㉝ 0.8Vp-p (14.3MHz)
❹
W801 ③ 1.4Vp-p(V)

DIODE

	8-719-404-46	DIODE MA110

IC

1	8-752-334-68	IC CXD1205R
2	8-759-148-87	IC CXA8016M
3	8-752-334-49	IC CXD1172AM
4	8-759-998-96	IC LM324DR
5	8-759-998-96	IC LM324DR

TRANSISTOR

	8-729-905-35	TRANSISTOR 2SC4081-R
	8-729-905-35	TRANSISTOR 2SC4081-R
	8-729-905-35	TRANSISTOR 2SC4081-R
	8-729-905-35	TRANSISTOR 2SC4081-R
	8-729-905-35	TRANSISTOR 2SC4081-R
	8-729-402-45	TRANSISTOR UN5212

DIODE

D001	8-719-941-86	DIODE DAN202U
D002	8-719-404-46	DIODE MA110
D003	8-719-404-46	DIODE MA110
D004	8-719-941-86	DIODE DAN202U
D101	8-719-949-46	DIODE 1T32
D102	8-719-404-46	DIODE MA110
D104	8-719-941-86	DIODE DAN202U
D201	8-719-801-41	DIODE 1SS196
D202	8-719-941-86	DIODE DAN202U
D203	8-719-941-86	DIODE DAN202U
D205	8-719-941-86	DIODE DAN202U
D208	8-719-941-86	DIODE DAN202U
D210	8-719-941-86	DIODE DAN202U
D211	8-719-941-86	DIODE DAN202U

IC

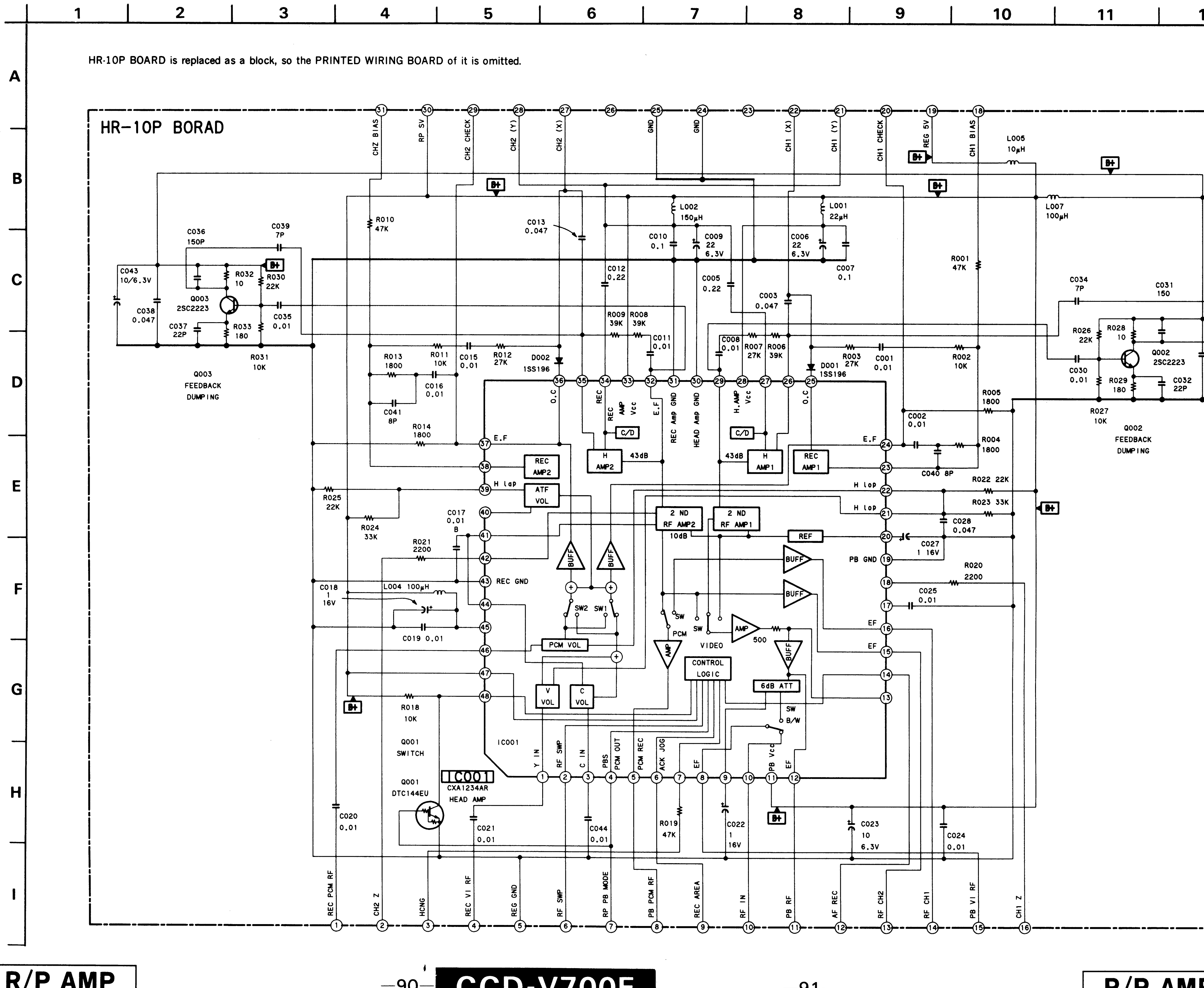
IC001	8-752-817-03	IC CXP80116-698Q
IC003	8-759-998-98	IC LM358D
IC004	8-759-148-05	IC CXA8010M
IC005	8-759-805-06	IC CXA1127M
IC006	8-759-990-55	IC CXA8006M
IC007	8-759-200-77	IC TC4028BF
IC008	8-759-748-72	IC BR93C46F
IC101	8-759-970-80	IC MB673198U
IC102	8-759-148-62	IC UPD6451G
IC103	8-759-420-01	IC AN2512S
IC104	8-759-234-20	IC TC7S08F
IC150	8-752-035-48	IC CXA1204Q
IC201	8-759-012-00	IC MC10H116M
IC202	8-759-998-92	IC LM393D
IC204	8-759-998-32	IC CXD-2107M

TRANSISTOR

Q001	8-729-907-00	TRANSISTOR DTC114EU
Q002	8-729-905-12	TRANSISTOR DTA144EU
Q003	8-729-905-18	TRANSISTOR DTC144EU
Q004	8-729-820-47	TRANSISTOR 2SB1202FAT
Q005	8-729-905-35	TRANSISTOR 2SC4081-R
Q007	8-729-905-35	TRANSISTOR 2SC4081-R
Q008	8-729-905-35	TRANSISTOR 2SC4081-R
Q009	8-729-905-35	TRANSISTOR 2SC4081-R
Q010	8-729-907-03	TRANSISTOR FMG5
Q011	8-729-905-18	TRANSISTOR DTC144EU
Q012	8-729-905-18	TRANSISTOR DTC144EU
Q013	8-729-905-18	TRANSISTOR DTC144EU
Q014	8-729-822-48	TRANSISTOR FC101
Q015	8-729-905-35	TRANSISTOR 2SC4081-R
Q016	8-729-905-23	TRANSISTOR 2SA1576-R
Q017	8-729-907-03	TRANSISTOR FMG5
Q018	8-729-905-18	TRANSISTOR DTC144EU
Q150	8-729-905-23	TRANSISTOR 2SA1576-R
Q151	8-729-905-18	TRANSISTOR DTC144EU
Q152	8-729-905-35	TRANSISTOR 2SC4081-R
Q153	8-729-905-23	TRANSISTOR 2SA1576-R
Q201	8-729-905-35	TRANSISTOR 2SC4081-R
Q202	8-729-905-35	TRANSISTOR 2SC4081-R
Q203	8-729-905-35	TRANSISTOR 2SC4081-R
Q208	8-729-216-22	TRANSISTOR 2SA1162
Q209	8-729-905-18	TRANSISTOR DTC144EU
Q213	8-729-216-22	TRANSISTOR 2SA1162
Q214	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q215	8-729-216-22	TRANSISTOR 2SA1162
Q217	8-729-102-07	TRANSISTOR 2SC2223-F13
Q218	8-729-905-35	TRANSISTOR 2SC4081-R
Q219	8-729-905-35	TRANSISTOR 2SC4081-R
Q221	8-729-905-35	TRANSISTOR 2SC4081-R
Q222	8-729-907-00	TRANSISTOR DTC114EU
Q223	8-729-905-35	TRANSISTOR 2SC4081-R
Q224	8-729-904-07	TRANSISTOR FMG2
Q225	8-729-905-45	TRANSISTOR DTA143EU
Q227	8-729-905-35	TRANSISTOR 2SC4081-R
Q229	8-729-141-48	TRANSISTOR 2SB624-BV345
Q230	8-729-141-48	TRANSISTOR 2SB624-BV345
Q231	8-729-905-18	TRANSISTOR DTC144EU
Q232	8-729-905-18	TRANSISTOR DTC144EU
Q238	8-729-117-31	TRANSISTOR 2SC4177-L5
Q239	8-729-905-18	TRANSISTOR DTC144EU
Q240	8-729-905-18	TRANSISTOR DTC144EU
Q242	8-729-117-31	TRANSISTOR 2SC4177-L5
Q243	8-729-905-18	TRANSISTOR DTC144EU
Q244	8-729-140-63	TRANSISTOR 2SA1611-M5
Q245	8-729-117-31	TRANSISTOR 2SC4177-L5
Q246	8-729-905-18	TRANSISTOR DTC144EU
Q247	8-729-905-35	TRANSISTOR 2SC4081-R
Q248	8-729-903-10	TRANSISTOR FMW1
Q249	8-729-905-18	TRANSISTOR DTC144EU
Q250	8-729-905-12	TRANSISTOR DTA144EU
Q251	8-729-905-35	TRANSISTOR 2SC4081-
Q252	8-729-102-07	TRANSISTOR 2SC2223-
Q253	8-729-320-17	TRANSISTOR 2SA1122C
Q254	8-729-905-35	TRANSISTOR 2SC4081-
Q255	8-729-904-07	TRANSISTOR FMG2
Q256	8-729-905-12	TRANSISTOR DTA144EU
Q257	8-729-905-18	TRANSISTOR DTC144EU
Q258	8-729-903-10	TRANSISTOR FMW1
Q259	8-729-905-35	TRANSISTOR 2SC4081-
Q260	8-729-905-35	TRANSISTOR 2SC4081-
Q261	8-729-905-23	TRANSISTOR 2SA1576-
Q262	8-729-905-23	TRANSISTOR 2SA1576-
Q263	8-729-907-26	TRANSISTOR IMX1
Q265	8-729-905-35	TRANSISTOR 2SC4081-
Q266	8-729-905-35	TRANSISTOR 2SC4081-
Q267	8-729-905-35	TRANSISTOR 2SC4081-
Q268	8-729-905-23	TRANSISTOR 2SA1576-
Q269	8-729-907-26	TRANSISTOR IMX1
Q270	8-729-905-12	TRANSISTOR DTA144EU
Q272	8-729-922-94	TRANSISTOR DTC143TU
Q273	8-729-141-48	TRANSISTOR 2SB624-B
Q277	8-729-905-35	TRANSISTOR 2SC4081-
Q278	8-729-905-35	TRANSISTOR 2SC4081-
Q279	8-729-905-18	TRANSISTOR DTC144EU
Q280	8-729-905-35	TRANSISTOR 2SC4081-
Q282	8-729-102-07	TRANSISTOR 2SC2223-
Q283	8-729-102-07	TRANSISTOR 2SC2223-
Q284	8-729-905-35	TRANSISTOR 2SC4081-
Q285	8-729-102-07	TRANSISTOR 2SC2223-
Q286	8-729-105-68	TRANSISTOR 2SC3356
Q287	8-729-924-46	TRANSISTOR DTC124XU
Q288	8-729-905-12	TRANSISTOR DTA144EU
Q289	8-729-102-07	TRANSISTOR 2SC2223-
Q290	8-729-102-07	TRANSISTOR 2SC2223-
Q291	8-729-907-26	TRANSISTOR IMX1
Q292	8-729-905-12	TRANSISTOR DTA144EU
Q294	8-729-905-18	TRANSISTOR DTC144EU
Q295	8-729-905-35	TRANSISTOR 2SC4081-

HR-10P (REC/PB AMP) SCHEMATIC DIAGRAM

HR-10P BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.



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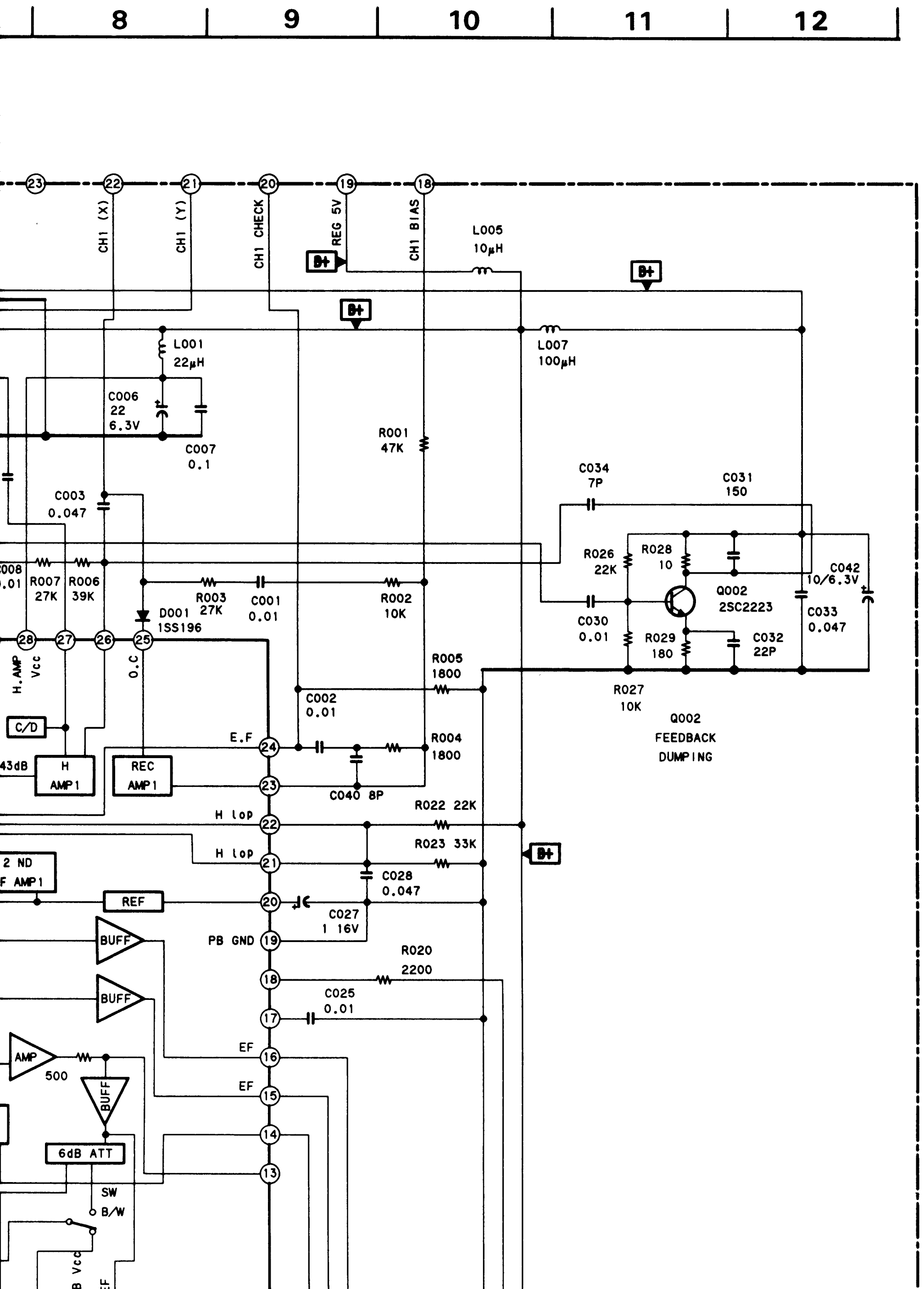
11
A
B
C
D
E
F
G
H
I
HR-10P BORAD
CH2 BIAS
RP 5V
CH2 CHECK
CH2 (Y)
CH2 (X)
GND
GND
CH1 (X)
CH1 (Y)
CH1 CHECK
REG 5V
CH1 BIAS
B+
L005 10μH
L007 100μH
L002 150μH
L001 22μH
C036 150P
C039 7P
C043 10/6.3V
C038 0.047
C037 22P
R032 10
R030 22K
Q003 2SC2223
R033 180
C035 0.01
R031 10K
Q003 FEEDBACK DUMPING
R010 47K
C013 0.047
C010 0.1
C009 22 6.3V
C006 22 6.3V
C007 0.1
C012 0.22
C005 0.22
C003 0.047
R001 47K
C034 7P
C031 150
R026 22K
R028 10
Q002 2SC2223
C030 0.01
R029 180
C032 22P
R027 10K
Q002 FEEDBACK DUMPING
R009 39K
R008 39K
C011 0.01
C008 0.01
R007 27K
R006 39K
R003 27K
C001 0.01
D001 1SS196
R002 10K
R013 1800
R011 10K
C015 0.01
R012 27K
D002 1SS196
C016 0.01
C041 8P
R014 1800
R005 1800
R004 1800
C002 0.01
C040 8P
R022 22K
R023 33K
C028 0.047
C027 1 16V
R020 2200
C025 0.01
O.C
REC
REC AMP Vcc
E.F
REC Amp GND
HEAD Amp GND
H.AMP Vcc
C/D
H AMP2
43dB
H AMP1
REC AMP1
REC AMP2
ATF VOL
H lop
2 ND RF AMP2
10dB
2 ND RF AMP1
REF
BUFF
PB GND
REC GND
EF
R025 22K
R024 33K
C017 0.01 B
R021 2200
C018 1 16V
L004 100μH
C019 0.01
SW2
SW1
PCM VOL
PCM
SW
VIDEO
AMP
500
CONTROL LOGIC
6dB ATT
SW B/W
V VOL
C VOL
R018 10K
Q001 SWITCH
Q001 DTC144EU
IC001
IC001 CXA1234AR HEAD AMP
Y IN
RF SWP
C IN
PBS PCM OUT
PCM REC
ACK JOG
PB Vcc
C020 0.01
C021 0.01
C044 0.01
R019 47K
C022 1 16V
C023 10 6.3V
C024 0.01
REC PCM RF
CH2 Z
HCNG
REC VI RF
REG GND
RF SWP
RP PB MODE
PB PCM RF
REC AREA
RF IN
PB RF
AF REC
RF CH2
RF CH1
PB VI RF
CH1 Z

5-18	TRANSISTOR DTC144EU
5-18	TRANSISTOR DTC144EU
2-48	TRANSISTOR FC101
5-35	TRANSISTOR 2SC4081-R
5-23	TRANSISTOR 2SA1576-R
7-03	TRANSISTOR FMG5
5-18	TRANSISTOR DTC144EU
5-23	TRANSISTOR 2SA1576-R
5-18	TRANSISTOR DTC144EU
5-35	TRANSISTOR 2SC4081-R
5-23	TRANSISTOR 2SA1576-R
5-35	TRANSISTOR 2SC4081-R
5-35	TRANSISTOR 2SC4081-R
5-35	TRANSISTOR 2SC4081-R
6-22	TRANSISTOR 2SA1162
5-18	TRANSISTOR DTC144EU
6-22	TRANSISTOR 2SA1162
9-76	TRANSISTOR 2SA1175-HFE
6-22	TRANSISTOR 2SA1162
2-07	TRANSISTOR 2SC2223-F13
5-35	TRANSISTOR 2SC4081-R
5-35	TRANSISTOR 2SC4081-R
5-35	TRANSISTOR 2SC4081-R
7-00	TRANSISTOR DTC114EU
5-35	TRANSISTOR 2SC4081-R
4-07	TRANSISTOR FMG2
5-45	TRANSISTOR DTA143EU
5-35	TRANSISTOR 2SC4081-R
1-48	TRANSISTOR 2SB624-BV345
1-48	TRANSISTOR 2SB624-BV345
5-18	TRANSISTOR DTC144EU
5-18	TRANSISTOR DTC144EU
7-31	TRANSISTOR 2SC4177-L5
5-18	TRANSISTOR DTC144EU
5-18	TRANSISTOR DTC144EU
7-31	TRANSISTOR 2SC4177-L5
5-18	TRANSISTOR DTC144EU
0-63	TRANSISTOR 2SA1611-M5
7-31	TRANSISTOR 2SC4177-L5
5-18	TRANSISTOR DTC144EU
5-35	TRANSISTOR 2SC4081-R

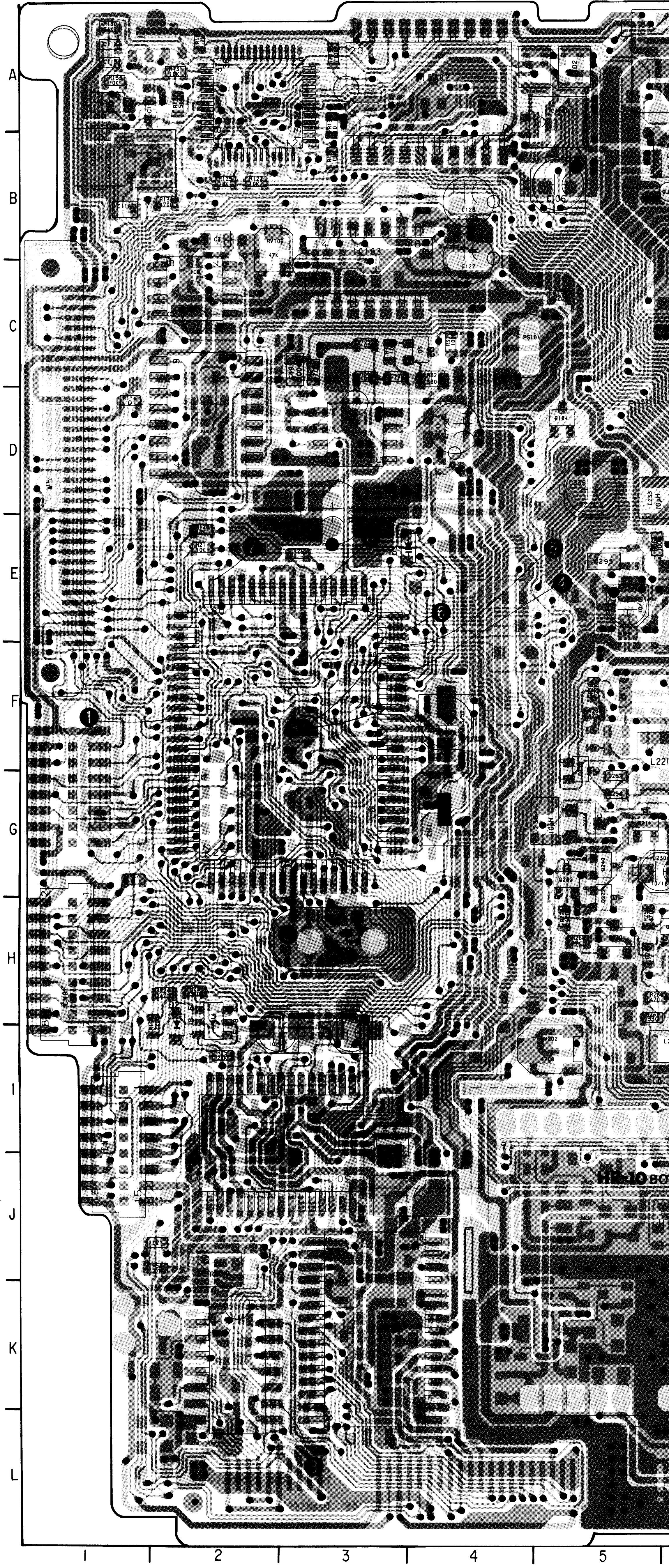
Q248	8-729-903-10	TRANSISTOR FMW1
Q249	8-729-905-18	TRANSISTOR DTC144EU
Q250	8-729-905-12	TRANSISTOR DTA144EU
Q251	8-729-905-35	TRANSISTOR 2SC4081-R
Q252	8-729-102-07	TRANSISTOR 2SC2223-F13
Q253	8-729-320-17	TRANSISTOR 2SA1122CD
Q254	8-729-905-35	TRANSISTOR 2SC4081-R
Q255	8-729-904-07	TRANSISTOR FMG2
Q256	8-729-905-12	TRANSISTOR DTA144EU
Q257	8-729-905-18	TRANSISTOR DTC144EU
Q258	8-729-903-10	TRANSISTOR FMW1
Q259	8-729-905-35	TRANSISTOR 2SC4081-R
Q260	8-729-905-35	TRANSISTOR 2SC4081-R
Q261	8-729-905-23	TRANSISTOR 2SA1576-R
Q262	8-729-905-23	TRANSISTOR 2SA1576-R
Q263	8-729-907-26	TRANSISTOR IMX1
Q265	8-729-905-35	TRANSISTOR 2SC4081-R
Q266	8-729-905-35	TRANSISTOR 2SC4081-R
Q267	8-729-905-35	TRANSISTOR 2SC4081-R
Q268	8-729-905-23	TRANSISTOR 2SA1576-R
Q269	8-729-907-26	TRANSISTOR IMX1
Q270	8-729-905-12	TRANSISTOR DTA144EU
Q272	8-729-922-94	TRANSISTOR DTC143TU
Q273	8-729-141-48	TRANSISTOR 2SB624-BV345
Q277	8-729-905-35	TRANSISTOR 2SC4081-R
Q278	8-729-905-35	TRANSISTOR 2SC4081-R
Q279	8-729-905-18	TRANSISTOR DTC144EU
Q280	8-729-905-35	TRANSISTOR 2SC4081-R
Q282	8-729-102-07	TRANSISTOR 2SC2223-F13
Q283	8-729-102-07	TRANSISTOR 2SC2223-F13
Q284	8-729-905-35	TRANSISTOR 2SC4081-R
Q285	8-729-102-07	TRANSISTOR 2SC2223-F13
Q286	8-729-105-68	TRANSISTOR 2SC3356
Q287	8-729-924-46	TRANSISTOR DTC124XU
Q288	8-729-905-12	TRANSISTOR DTA144EU
Q289	8-729-102-07	TRANSISTOR 2SC2223-F13
Q290	8-729-102-07	TRANSISTOR 2SC2223-F13
Q291	8-729-907-26	TRANSISTOR IMX1
Q292	8-729-905-12	TRANSISTOR DTA144EU
Q294	8-729-905-18	TRANSISTOR DTC144EU
Q295	8-729-905-35	TRANSISTOR 2SC4081-R


8
9
10
11
12
23
22
CH1 (X)
21
CH1 (Y)
20
CH1 CHECK
19
REG 5V
18
CH1 BIAS
L005
10µH
B+
L001
22µH
L007
100µH
C006
22
6.3V
C007
0.1
R001
47K
C003
0.047
C034
7P
C031
150
R026
22K
R028
10
Q002
2SC2223
C042
10/6.3V
C033
0.047
R007
27K
R006
39K
R003
27K
C001
0.01
R002
10K
D001
1SS196
C030
0.01
R029
180
C032
22P
R027
10K
Q002
FEEDBACK
DUMPING
H.AMP Vcc
O.C
R005
1800
C002
0.01
R004
1800
E.F
C/D
43dB
H AMP1
REC AMP1
C040 8P
R022 22K
R023 33K
H lop
H lop
2 ND
F AMP1
C028
0.047
REF
C027
1 16V
PB GND
R020
2200
BUFF
BUFF
C025
0.01
AMP
500
EF
EF
6dB ATT
SW
B/W
PB Vcc
C022
1
16V
C023
10
6.3V
C024
0.01
RF IN
PB RF
AF REC
RF CH2
RF CH1
PB VI RF
CH1 Z
10
11
12
13
14
15
16

SS-133 (SERVO, SYSTEM CONTROL, REC/PB AMP) PRINTED WIRING BOARD

—Ref. No. SS-133 BOARD: 2000 series—

SS-133 BOARD
(COMPONENT SIDE)


A
B
C
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L
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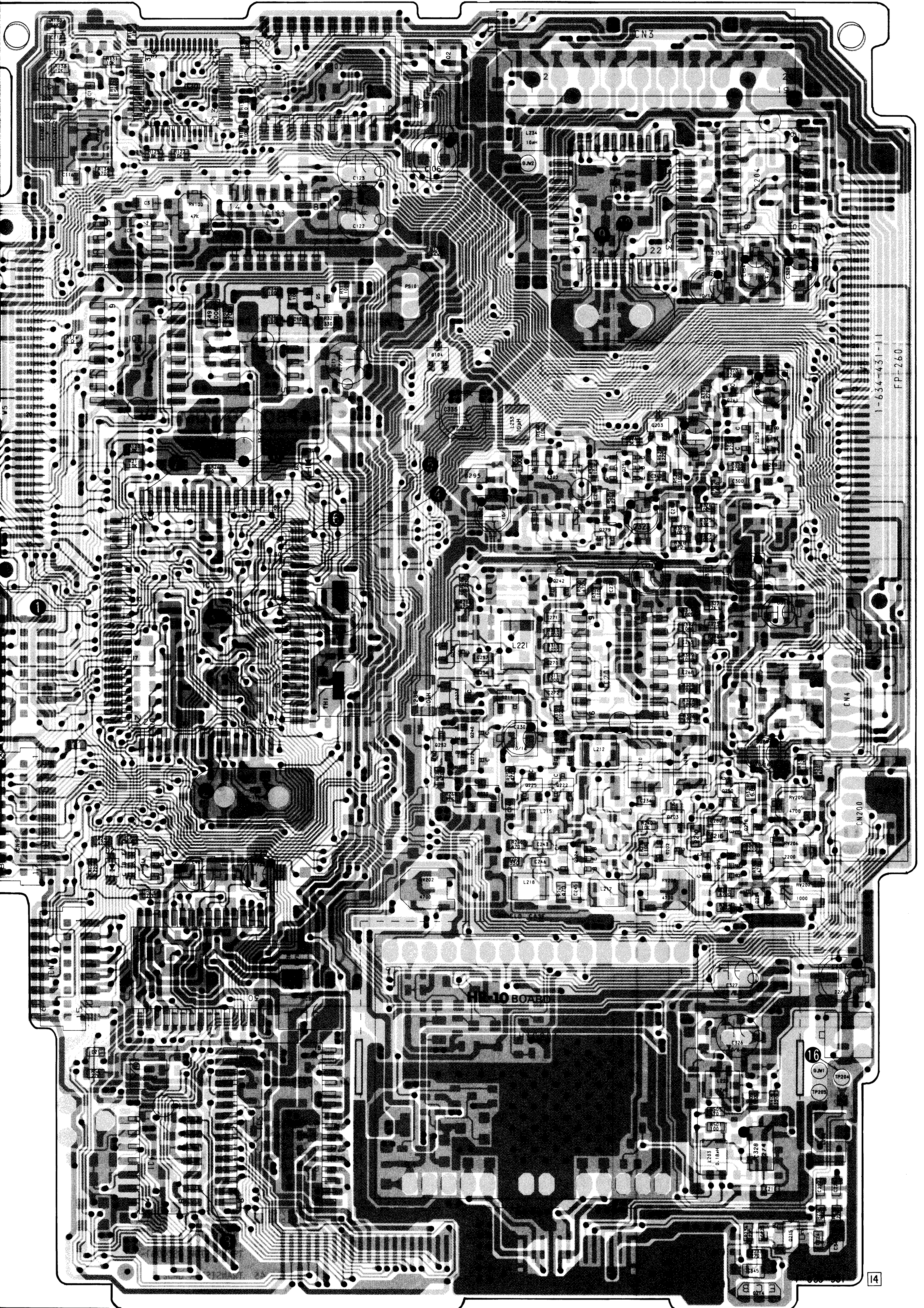
HR-10 BO

-133 (SERVO, SYSTEM CONTROL, REC/PB AMP) PRINTED WIRING BOARD

ef. No. SS-133 BOARD : 2000 series—

S -133 BOARD
OMPONENT SIDE)


CN3
CN4
CN200
HE-10 BOARD
1-634-431-11
FP-260
L221
L234 10μH
L233 10μH
RV100 47K
RV202 4700
RV205 4700
RV206 2200
C123
C122
C106
C326
TP204
TP205
16
1
14
1
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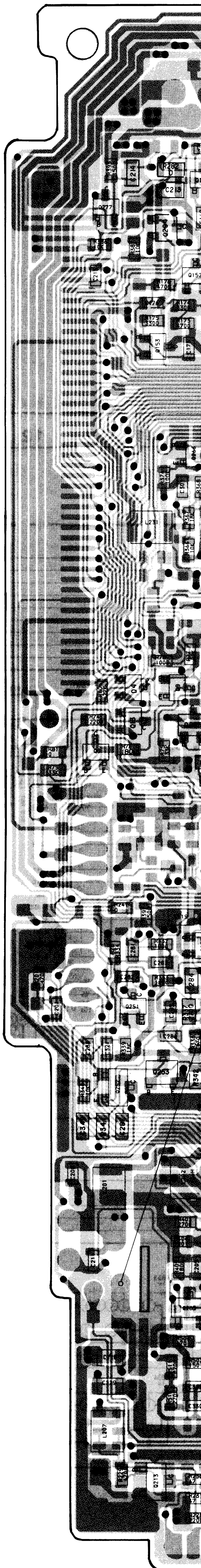
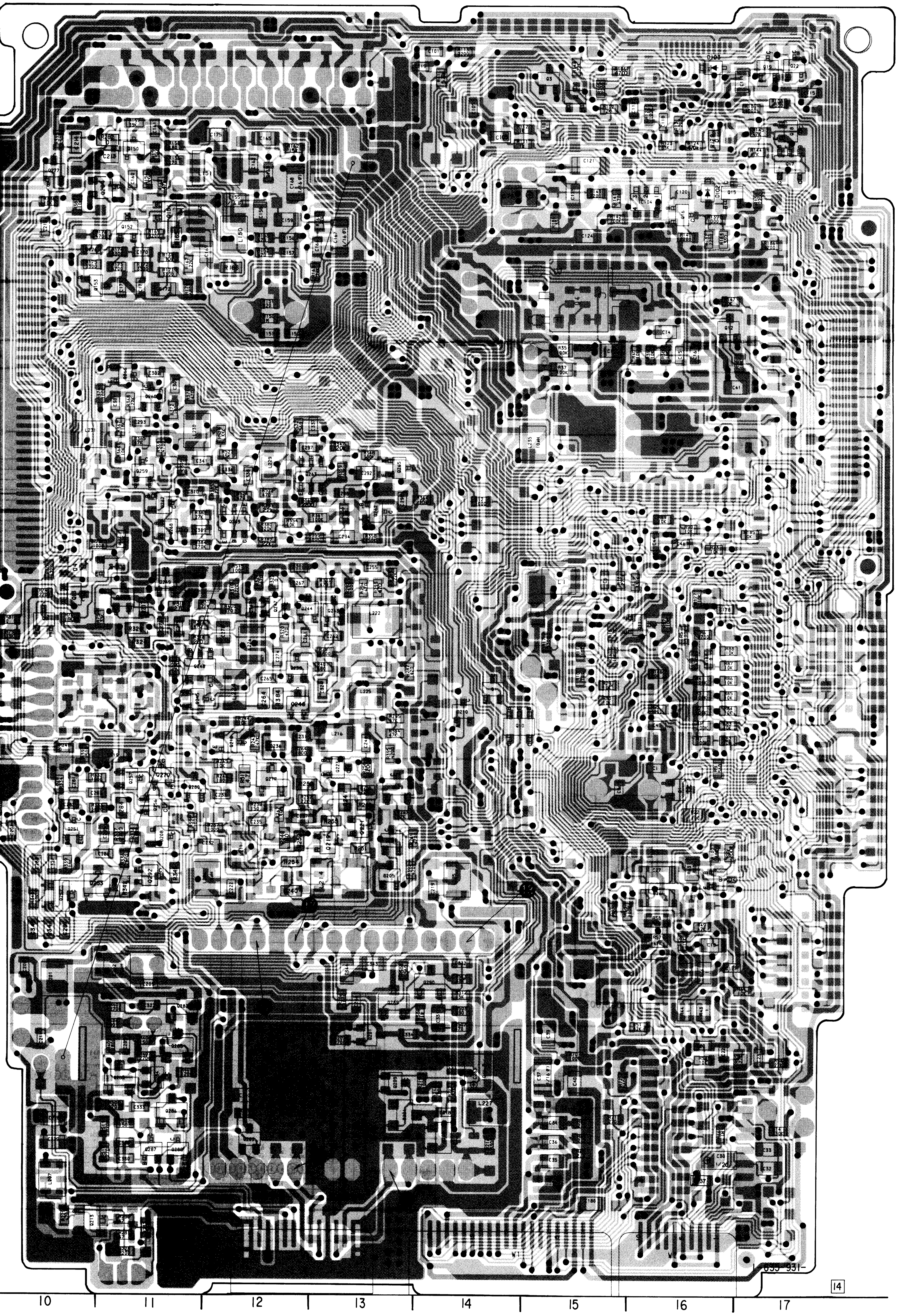
SS-133 BOARD
(CONDUCTOR SIDE



SS-133 BOARD
(CONDUCTOR SIDE)


14
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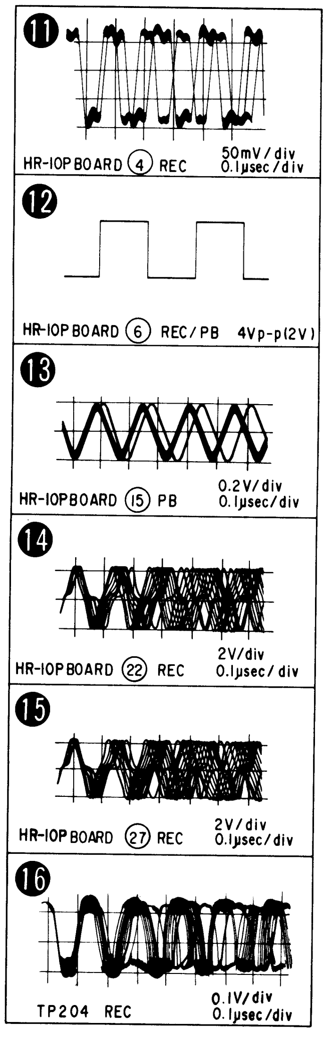
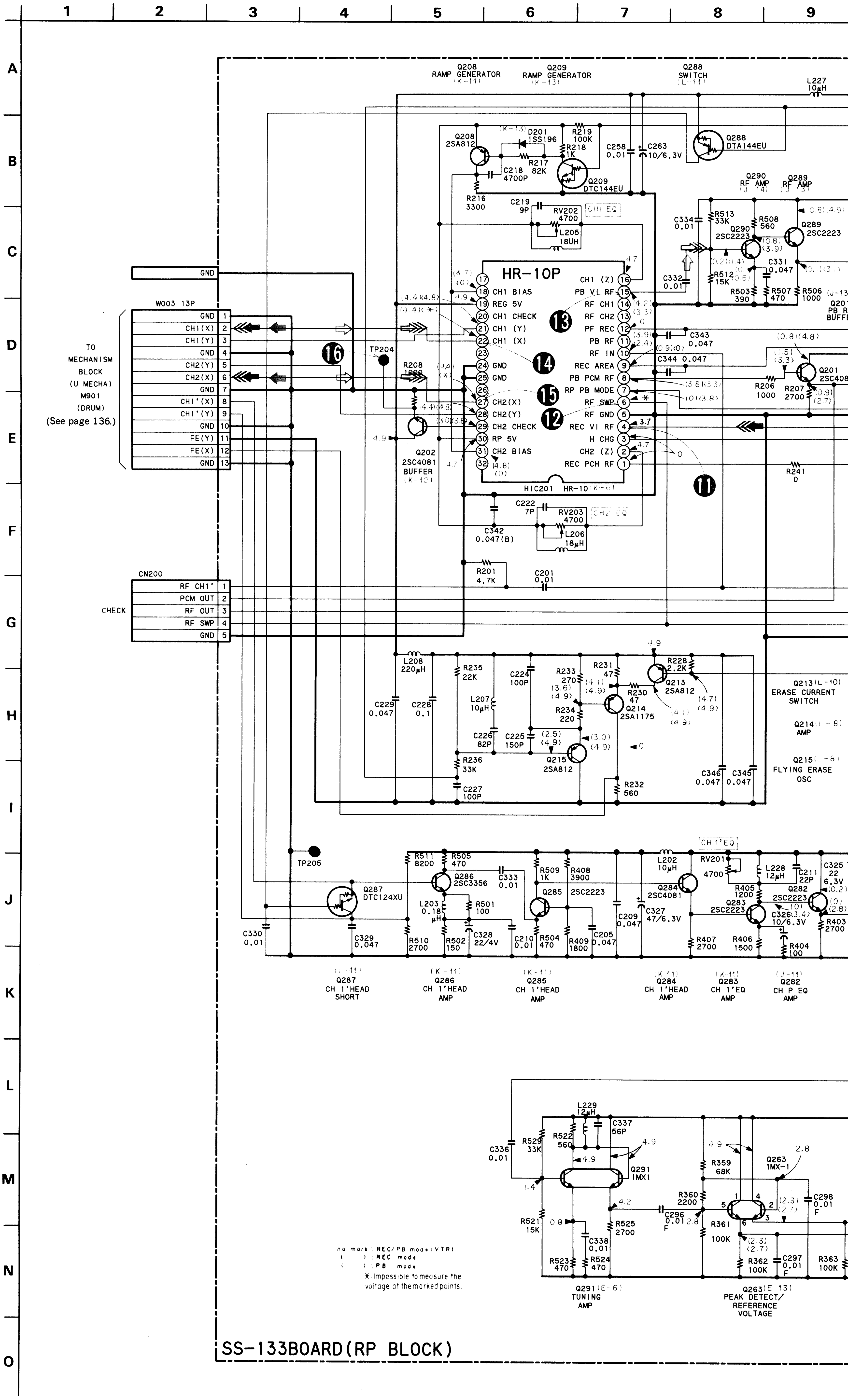
17

SS-133 BOARD (RP BLOCK)



SS-133 (SERVO, SYSTEM CONTROL, REC/PB AMP) SCHEMATIC DIAGRAM

—Ref. No. SS-133 BOARD : 2000 series—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A
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C
D
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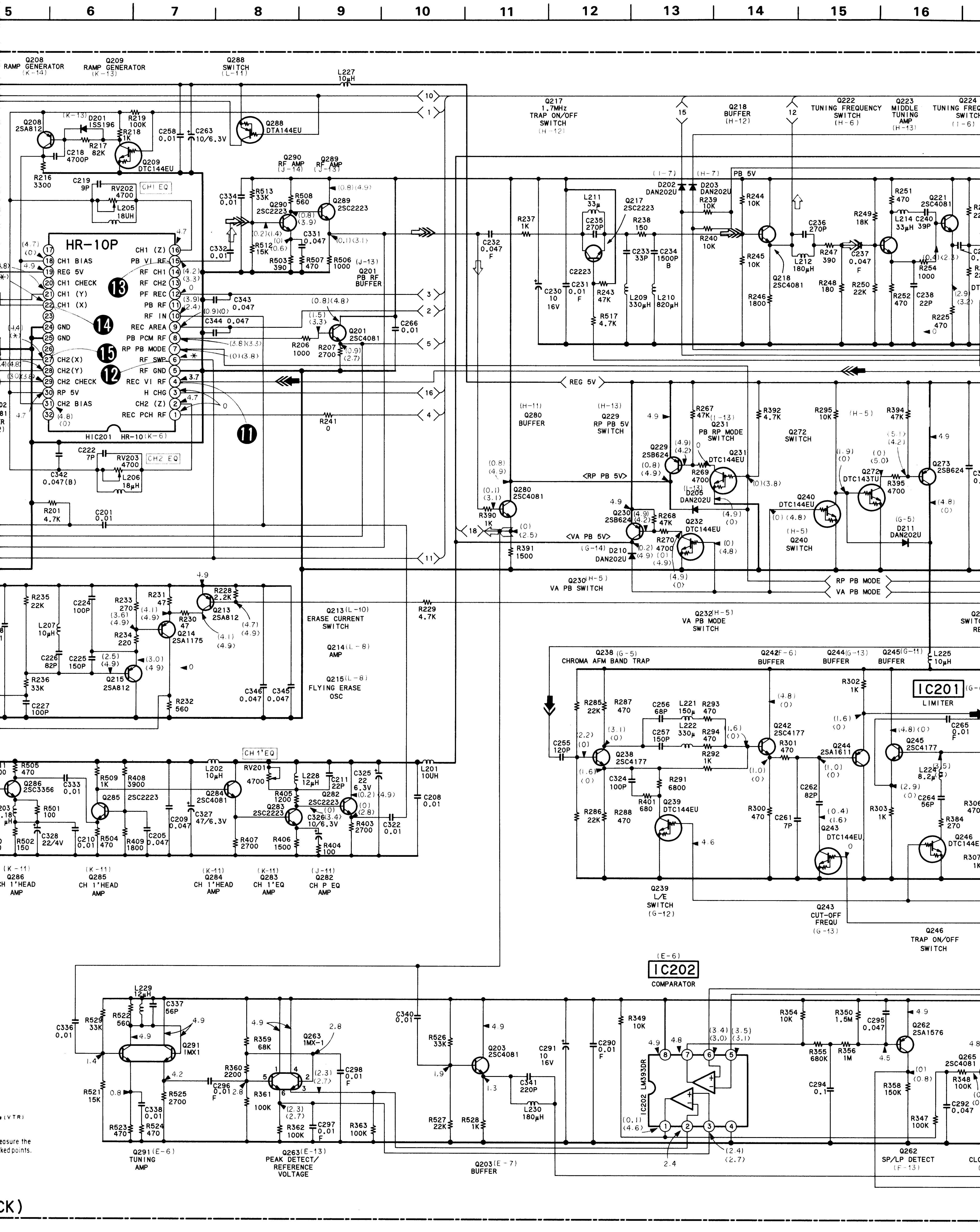
F
G
H
I
J
K
L
M
N
O
Q208 RAMP GENERATOR (K-14)
Q209 RAMP GENERATOR (K-13)
Q288 SWITCH (L-11)
L227 10μH
Q208 2SA812
D201 1SS196
R219 100K
R218 1K
R217 82K
C218 4700P
Q209 DTC144EU
R216 3300
C258 0.01
C263 10/6.3V
Q288 DTA144EU
C219 9P
RV202 4700
CH1 EQ
L205 18UH
Q290 RF AMP (J-14)
Q289 RF AMP (J-13)
C334 0.01
R513 33K
R508 560
Q290 2SC2223
Q289 2SC2223
C331 0.047
R512 15K
R503 390
R507 470
R506 1000
C332 0.01
GND
W003 13P
GND 1
CH1(X) 2
CH1(Y) 3
GND 4
CH2(Y) 5
CH2(X) 6
GND 7
CH1'(X) 8
CH1'(Y) 9
GND 10
FE(Y) 11
FE(X) 12
GND 13
TO MECHANISM BLOCK (U MECHA) M901 (DRUM)
(See page 136.)
HR-10P
17
18 CH1 BIAS
19 REG 5V
20 CH1 CHECK
21 CH1 (Y)
22 CH1 (X)
23
24 GND
25 GND
26
27 CH2(X)
28 CH2(Y)
29 CH2 CHECK
30 RP 5V
31 CH2 BIAS
32
CH1 (Z) 16
PB VI RF 15
RF CH1 14
RF CH2 13
PF REC 12
PB RF 11
RF IN 10
REC AREA 9
PB PCM RF 8
RP PB MODE 7
RF SWP 6
RF GND 5
REC VI RF 4
H CHG 3
CH2 (Z) 2
REC PCH RF 1
HIC201 HR-10 (K-6)
⓫
⓬
⓭
⓮
⓯
⓰
TP204
R208 1000
Q202 2SC4081 BUFFER (K-12)
C343 0.047
C344 0.047
Q201 2SC4081
R206 1000
R207 2700
R241 0
C222 7P
RV203 4700
CH2 EQ
L206 18μH
C342 0.047(B)
R201 4.7K
C201 0.01
CN200
RF CH1' 1
PCM OUT 2
RF OUT 3
RF SWP 4
GND 5
CHECK
L208 220μH
R235 22K
C224 100P
R233 270
R231 47
R228 2.2K
Q213 2SA812
R230 47
R234 220
Q214 2SA1175
C229 0.047
C228 0.1
L207 10μH
C226 82P
C225 150P
Q215 2SA812
R236 33K
C227 100P
R232 560
C346 0.047
C345 0.047
Q213 (L-10) ERASE CURRENT SWITCH
Q214 (L-8) AMP
Q215 (L-8) FLYING ERASE OSC
TP205
R511 8200
R505 470
Q286 2SC3356
C333 0.01
R509 1K
R408 3900
Q285 2SC2223
L202 10μH
CH 1' EQ
RV201 4700
L228 12μH
C211 22P
C325 22 6.3V
Q287 DTC124XU
L203 0.18μH
R501 100
C328 22/4V
Q284 2SC4081
C327 47/6.3V
C209 0.047
R405 1200
Q283 2SC2223
Q282 2SC2223
C326 10/6.3V
R403 2700
C330 0.01
C329 0.047
R510 2700
R502 150
C210 0.01
R504 470
R409 1800
C205 0.047
R407 2700
R406 1500
R404 100
Q287 CH 1'HEAD SHORT
Q286 CH 1'HEAD AMP
Q285 CH 1'HEAD AMP
Q284 CH 1'HEAD AMP
Q283 CH 1'EQ AMP
Q282 CH P EQ AMP
L229 12μH
C337 56P
C336 0.01
R529 33K
R522 560
Q291 IMX1
R521 15K
R525 2700
C338 0.01
R523 470
R524 470
C296 0.01 F
R360 2200
R359 68K
Q263 IMX-1
C298 0.01 F
R361 100K
R362 100K
C297 0.01 F
R363 100K
Q291 (E-6) TUNING AMP
Q263 (E-13) PEAK DETECT/ REFERENCE VOLTAGE
SS-133BOARD(RP BLOCK)

no mark : REC/PB mode (VTR)
( ) : REC mode
( ) : PB mode
✱ : Impossible to measure the voltage at the marked points.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14
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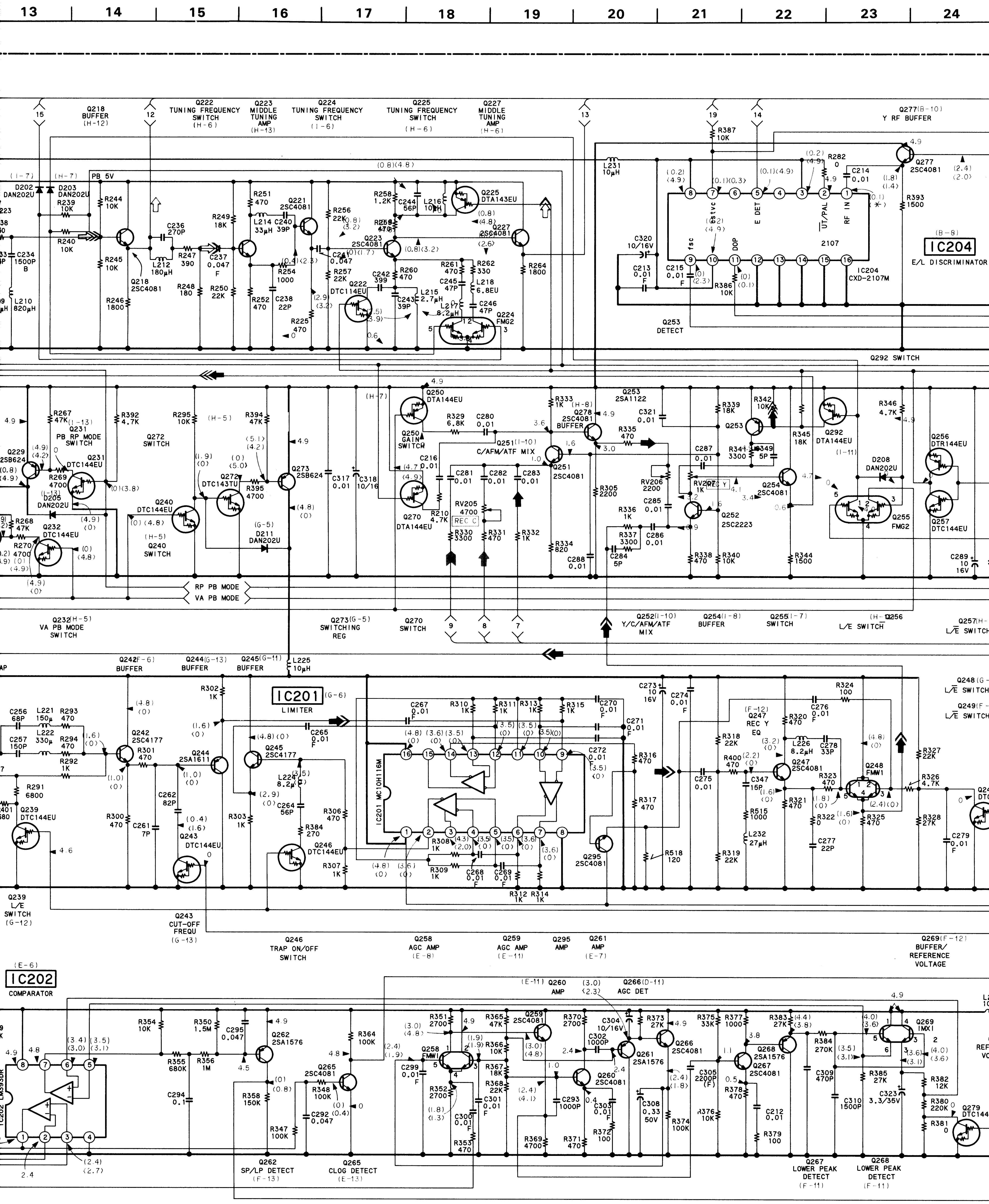
16
Q208 RAMP GENERATOR (K-14)
Q209 RAMP GENERATOR (K-13)
Q288 SWITCH (L-11)
L227 10μH
Q208 2SA812
D201 1SS196
R219 100K
R218 1K
R217 82K
C218 4700P
Q209 DTC144EU
C258 0.01
C263 10/6.3V
Q288 DTA144EU
R216 3300
C219 9P
RV202 4700
CH1 EQ
L205 18UH
HR-10P
CH1 BIAS
REG 5V
CH1 CHECK
CH1 (Y)
CH1 (X)
GND
CH2(X)
CH2(Y)
CH2 CHECK
RP 5V
CH2 BIAS
CH1 (Z)
PB VI RF
RF CH1
RF CH2
PF REC
PB RF
RF IN
REC AREA
PB PCM RF
RP PB MODE
RF SWP
RF GND
REC VI RF
H CHG
CH2 (Z)
REC PCH RF
HIC201 HR-10(K-6)
⑪
⑫
⑬
⑭
⑮
C222 7P
RV203 4700
CH2 EQ
L206 18μH
C342 0.047(B)
R201 4.7K
C201 0.01
Q290 RF AMP (J-14)
Q289 RF AMP (J-13)
C334 0.01
R513 33K
R508 560
Q290 2SC2223
Q289 2SC2223
C332 0.01
R512 15K
C331 0.047
R503 390
R507 470
R506 1000
Q201 PB RF BUFFER (J-13)
C343 0.047
C344 0.047
Q201 2SC4081
C266 0.01
R206 1000
R207 2700
R241 0
Q217 1.7MHz TRAP ON/OFF SWITCH (H-12)
Q218 BUFFER (H-12)
Q222 TUNING FREQUENCY SWITCH (H-6)
Q223 MIDDLE TUNING AMP (H-13)
Q224 TUNING FREQ SWITCH (I-6)
D202 DAN202U
D203 DAN202U
PB 5V
R239 10K
R244 10K
R251 470
Q221 2SC4081
L211 33μ
C235 270P
Q217 2SC2223
R237 1K
R238 150
C232 0.047 F
R240 10K
C236 270P
R249 18K
L214 33μH
C240 39P
C233 33P
C234 1500P B
C2223
R245 10K
L212 180μH
R247 390
C237 0.047 F
R254 1000
C230 10 16V
C231 0.01 F
R243 47K
L209 330μH
L210 820μH
Q218 2SC4081
R246 1800
R248 180
R250 22K
R252 470
C238 22P
R225 470
R517 4.7K
REG 5V
Q280 BUFFER (H-11)
Q229 RP PB 5V SWITCH (H-13)
R267 47K
Q231 PB RP MODE SWITCH (I-13)
R392 4.7K
R295 10K
R394 47K
Q272 SWITCH (H-5)
Q229 2SB624
R269 4700
Q231 DTC144EU
D205 DAN202U
<RP PB 5V>
Q280 2SC4081
Q272 DTC143TU
R395 4700
Q273 2SB624
Q240 DTC144EU
R390 1K
Q230 2SB624
R268 47K
Q232 DTC144EU
<VA PB 5V>
R391 1500
D210 DAN202U
R270 4700
Q240 SWITCH (H-5)
D211 DAN202U
Q230 VA PB SWITCH (H-5)
Q232 VA PB MODE SWITCH (H-5)
RP PB MODE
VA PB MODE
R235 22K
C224 100P
R233 270
R231 47
R228 2.2K
Q213 2SA812
R230 47
Q214 2SA1175
R234 220
L207 10μH
C226 82P
C225 150P
Q215 2SA812
R236 33K
C227 100P
R232 560
C346 0.047
C345 0.047
Q213 ERASE CURRENT SWITCH (L-10)
Q214 AMP (L-8)
Q215 FLYING ERASE OSC (L-8)
R229 4.7K
Q238 CHROMA AFM BAND TRAP (G-5)
Q242 BUFFER (F-6)
Q244 BUFFER (G-13)
Q245 BUFFER (G-11)
L225 10μH
IC201 LIMITER
R302 1K
R285 22K
R287 470
C256 68P
L221 150μ
R293 470
L222 330μ
C257 150P
R294 470
Q242 2SC4177
C265 0.01 F
C255 120P
Q238 2SC4177
R292 1K
R301 470
Q244 2SA1611
Q245 2SC4177
C324 100P
R291 6800
L224 8.2μ
R401 680
Q239 DTC144EU
C262 82P
C264 56P
R306 470
R286 22K
R288 470
R300 470
C261 7P
R303 1K
R384 270
Q243 DTC144EU
Q246 DTC144EU
R307 1K
Q239 L/E SWITCH (G-12)
Q243 CUT-OFF FREQU (G-13)
Q246 TRAP ON/OFF SWITCH
R505 470
Q286 2SC3356
C333 0.01
R509 1K
R408 3900
Q285 2SC2223
L202 10μH
CH 1'EQ
RV201 4700
L228 12μH
C211 22P
C325 22 6.3V
L201 10UH
R501 100
Q284 2SC4081
R405 1200
Q282 2SC2223
C208 0.01
C327 47/6.3V
C209 0.047
Q283 2SC2223
C326 10/6.3V
R403 2700
C322 0.01
C328 22/4V
R502 150
C210 0.01
R504 470
R409 1800
C205 0.047
R407 2700
R406 1500
R404 100
Q286 CH 1'HEAD AMP (K-11)
Q285 CH 1'HEAD AMP (K-11)
Q284 CH 1'HEAD AMP (K-11)
Q283 CH 1'EQ AMP (K-11)
Q282 CH P EQ AMP (J-11)
IC202 COMPARATOR (E-6)
L229 12μH
C337 56P
R529 33K
R522 560
C336 0.01
Q291 1MX1
R521 15K
R525 2700
C338 0.01
R523 470
R524 470
R359 68K
Q263 1MX-1
R360 2200
C296 0.01 F
R361 100K
C298 0.01 F
R362 100K
C297 0.01 F
R363 100K
C340 0.01
R526 33K
Q203 2SC4081
C291 10 16V
C341 220P
L230 180μH
R527 22K
R528 1K
C290 0.01 F
R349 10K
IC202 LM393DR
R354 10K
R350 1.5M
C295 0.047
Q262 2SA1576
R355 680K
R356 1M
C294 0.1
Q265 2SC4081
R358 150K
R348 100K
C292 0.047
R347 100K
Q291 TUNING AMP (E-6)
Q263 PEAK DETECT/ REFERENCE VOLTAGE (E-13)
Q203 BUFFER (E-7)
Q262 SP/LP DETECT (F-13)
(VTR)
easure the
ked points.

CK)

13
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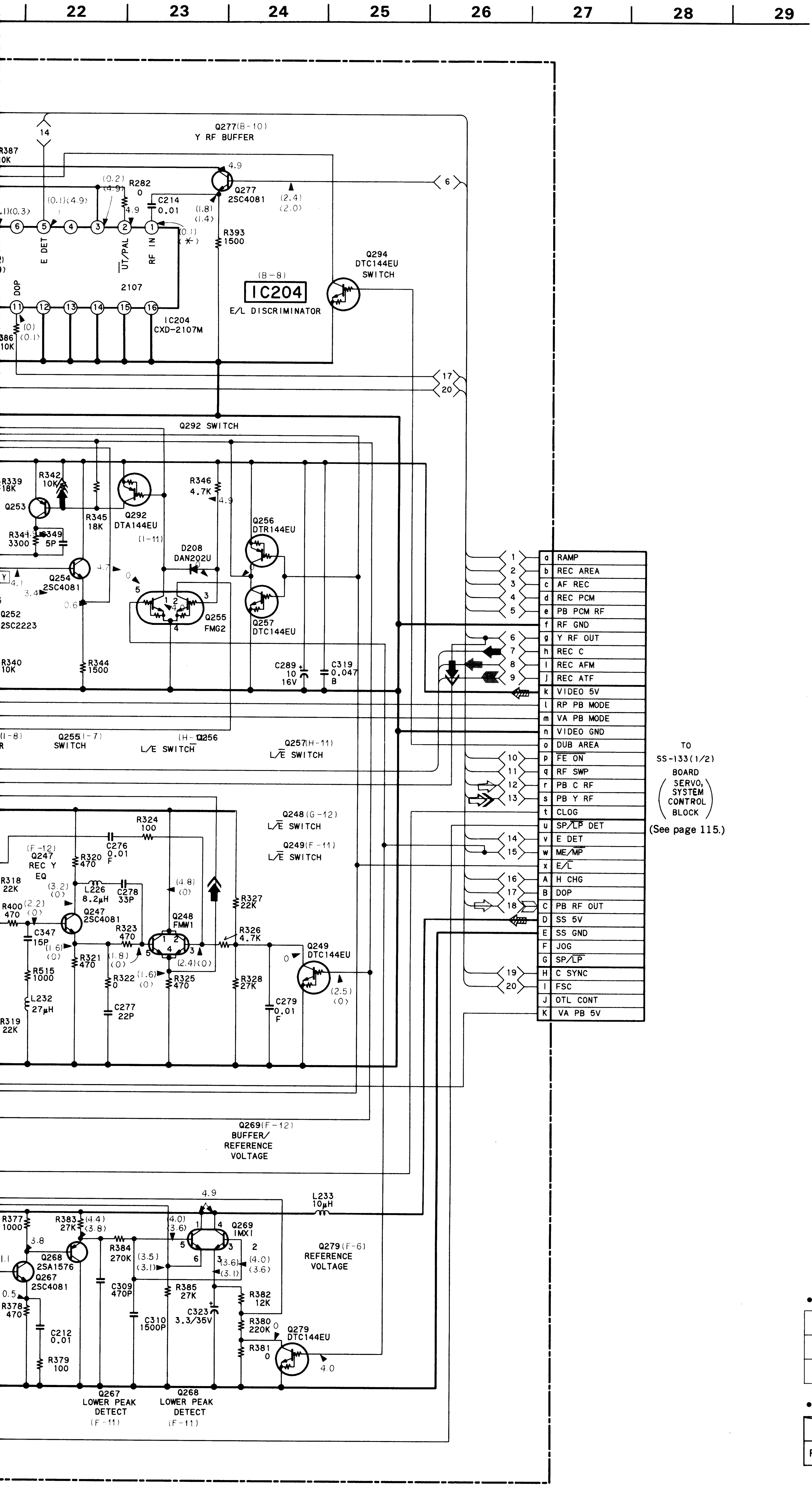
Q218 BUFFER (H-12)
Q222 TUNING FREQUENCY SWITCH (H-6)
Q223 MIDDLE TUNING AMP (H-13)
Q224 TUNING FREQUENCY SWITCH (I-6)
Q225 TUNING FREQUENCY SWITCH (H-6)
Q227 MIDDLE TUNING AMP (H-6)
Q277(B-10) Y RF BUFFER
PB 5V
IC204 E/L DISCRIMINATOR
IC204 CXD-2107M
Q253 DETECT
Q292 SWITCH
Q253 2SA1122
Q250 GAIN SWITCH
Q251(I-10) C/AFM/ATF MIX
Q278 BUFFER
Q231 PB RP MODE SWITCH
Q272 SWITCH
Q240 SWITCH
RP PB MODE
VA PB MODE
Q232(H-5) VA PB MODE SWITCH
Q273(G-5) SWITCHING REG
Q270 SWITCH
Q252(I-10) Y/C/AFM/ATF MIX
Q254(I-8) BUFFER
Q255(I-7) SWITCH
Q256 L/E SWITCH
Q257 L/E SWITCH
Q242(F-6) BUFFER
Q244(G-13) BUFFER
Q245(G-11) BUFFER
IC201 (G-6) LIMITER
IC201 MC10H116M
Q248 L/E SWITCH
Q249 L/E SWITCH
Q247 REC Y EQ
Q239 L/E SWITCH (G-12)
Q243 CUT-OFF FREQU (G-13)
Q246 TRAP ON/OFF SWITCH
Q258 AGC AMP (E-8)
Q259 AGC AMP (E-11)
Q295 AMP
Q261 AMP (E-7)
Q269(F-12) BUFFER/ REFERENCE VOLTAGE
IC202 (E-6) COMPARATOR
IC202 LM393DR
Q260 AMP (E-11)
Q266(D-11) AGC DET
Q262 SP/LP DETECT (F-13)
Q265 CLOG DETECT (E-13)
Q267 LOWER PEAK DETECT (F-11)
Q268 LOWER PEAK DETECT (F-11)
REC C
REC Y



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Q277(B-10) Y RF BUFFER
Q277 2SC4081
R282 0
C214 0.01
R393 1500
IC204 E/L DISCRIMINATOR
IC204 CXD-2107M
E DET
UT/PAL
RF IN
DOP
Q294 DTC144EU SWITCH
Q292 SWITCH
Q292 DTA144EU
Q253
Q254 2SC4081
Q252 2SC2223
Q255 FMG2
Q256 DTR144EU
Q257 DTC144EU
D208 DAN202U
R339 18K
R342 10K
R345 18K
R346 4.7K
R343 3300
C349 5P
R340 10K
R344 1500
C289 10 16V
C319 0.047 B
Q255(I-7) SWITCH
Q256(H-10) L/E SWITCH
Q257(H-11) L/E SWITCH
Q248(G-12) L/E SWITCH
Q249(F-11) L/E SWITCH
Q247 REC Y EQ
Q247 2SC4081
Q248 FMW1
Q249 DTC144EU
R324 100
C276 0.01 F
R320 470
R318 22K
L226 8.2μH
C278 33P
R400 470
C347 15P
R323 470
R326 4.7K
R327 22K
R321 470
R322 0
R325 470
R328 27K
C279 0.01 F
R515 1000
L232 27μH
C277 22P
R319 22K
Q269(F-12) BUFFER/ REFERENCE VOLTAGE
L233 10μH
Q269 IMX1
Q279(F-6) REFERENCE VOLTAGE
Q279 DTC144EU
R377 1000
R383 27K
R384 270K
Q268 2SA1576
Q267 2SC4081
R378 470
C212 0.01
R379 100
C309 470P
C310 1500P
R385 27K
C323 3.3/35V
R382 12K
R380 220K
R381 0
Q267 LOWER PEAK DETECT (F-11)
Q268 LOWER PEAK DETECT (F-11)
a RAMP
b REC AREA
c AF REC
d REC PCM
e PB PCM RF
f RF GND
g Y RF OUT
h REC C
i REC AFM
j REC ATF
k VIDEO 5V
l RP PB MODE
m VA PB MODE
n VIDEO GND
o DUB AREA
p FE ON
q RF SWP
r PB C RF
s PB Y RF
t CLOG
u SP/LP DET
v E DET
w ME/MP
x E/L
A H CHG
B DOP
C PB RF OUT
D SS 5V
E SS GND
F JOG
G SP/LP
H C SYNC
I FSC
J OTL CONT
K VA PB 5V
TO SS-133(1/2) BOARD (SERVO, SYSTEM CONTROL BLOCK)
(See page 115.)

• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	⇛	⋙	➡
PB	⇨	⇨	⋙	⇨

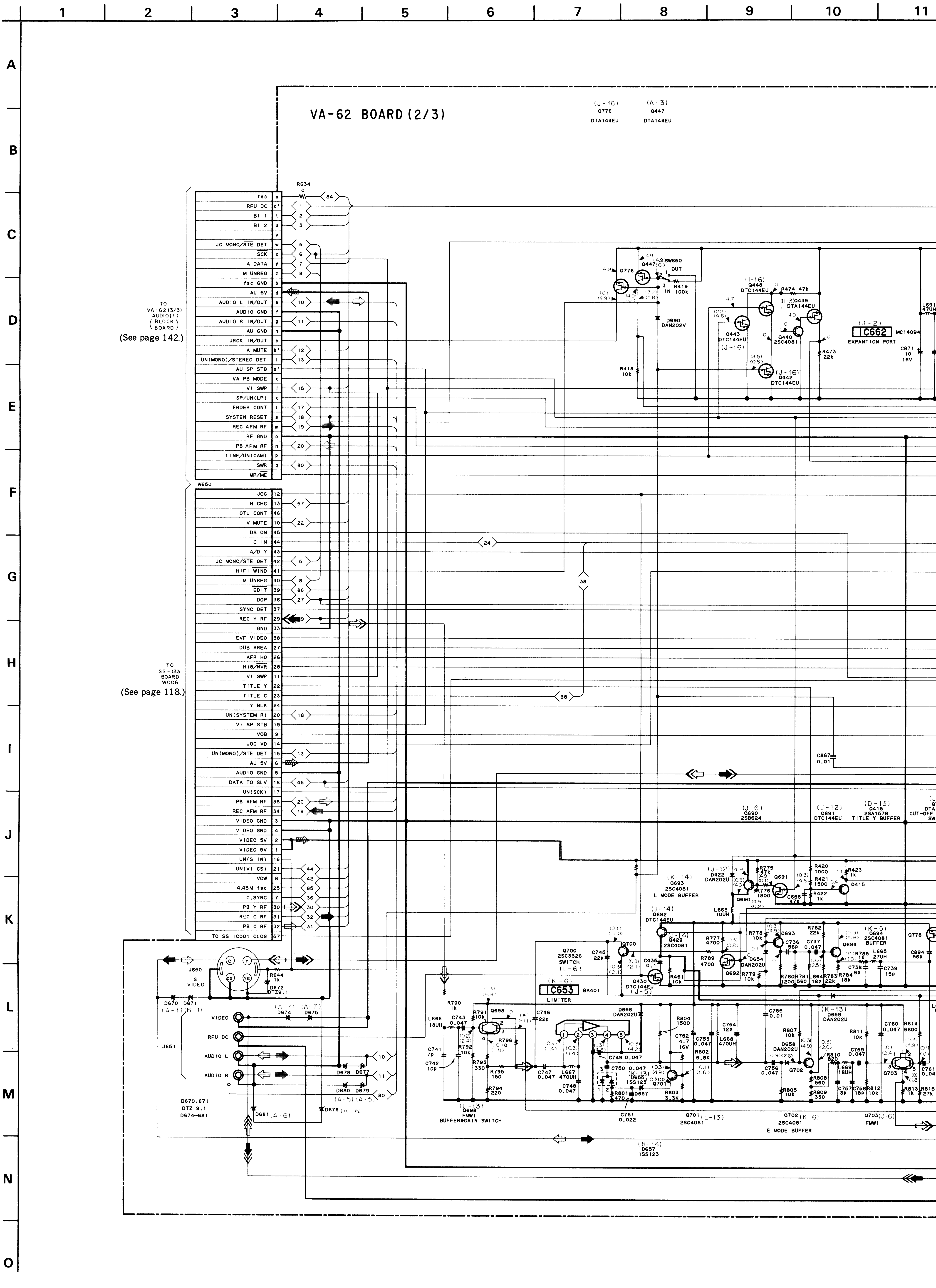
• Signal path

	REC	REC/PB	PB
Ref.signal	➤	➢	▷

• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

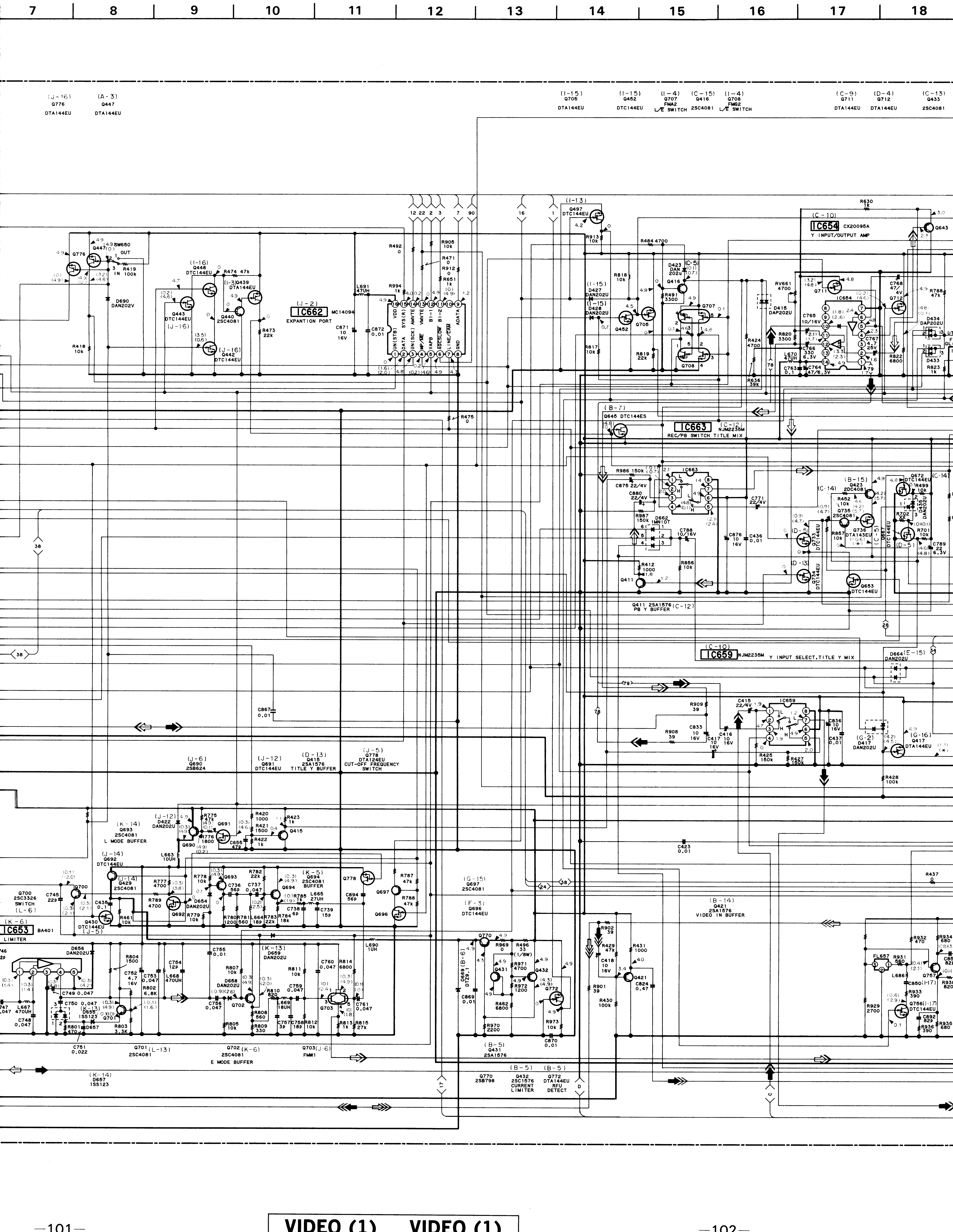
VA-62 (Y/CHROMA SIGNAL PROCESS, AUDIO SIGNAL PROCESS) SCHEMATIC DIAGRAM
—Ref. No. VA-62 BOARD : 1000 series—



VA-62 BOARD (2/3)
TO VA-62 (3/3) AUDIO (1) (BLOCK BOARD)
(See page 142.)
TO SS-133 BOARD W006
(See page 118.)
W650
fsc
RFU DC
BI 1
BI 2
JC MONO/STE DET
SCK
A DATA
M UNREG
fsc GND
AU 5V
AUDIO L IN/OUT
AUDIO GND
AUDIO R IN/OUT
AU GND
JRCK IN/OUT
A MUTE
UN(MONO)/STEREO DET
AU SP STB
VA PB MODE
VI SWP
SP/UN(LP)
FRDER CONT
SYSTEM RESET
REC AFM RF
RF GND
PB AFM RF
LINE/UN(CAM)
SWR
MP/ME
JOG
H CHG
OTL CONT
V MUTE
DS ON
C IN
A/D Y
HIFI WIND
EDIT
DOP
SYNC DET
REC Y RF
GND
EVF VIDEO
DUB AREA
AFR HD
H18/NVR
TITLE Y
TITLE C
Y BLK
UN(SYSTEM R)
VI SP STB
VOB
JOG VD
DATA TO SLV
UN(SCK)
PB AFM RF
VIDEO GND
VIDEO 5V
UN(S IN)
UN(VI CS)
VOW
4.43M fsc
C.SYNC
PB Y RF
REC C RF
PB C RF
TO SS IC001 CLOG
J650 S VIDEO
J651
VIDEO
RFU DC
AUDIO L
AUDIO R
D670,671 DTZ 9.1 D674~681
Q776 DTA144EU
Q447 DTA144EU
S650
R419 100k
D690 DAN202V
Q448 DTC144EU
Q439 DTA144EU
Q443 DTC144EU
Q440 2SC4081
Q442 DTC144EU
IC662 MC14094 EXPANTION PORT
C867 0.01
Q690 2SB624
Q691 DTC144EU
Q415 2SA1576 TITLE Y BUFFER
Q693 2SC4081 L MODE BUFFER
Q692 DTC144EU
Q429 2SC4081
Q694 2SC4081 BUFFER
Q700 2SC3326 SWITCH
IC653 BA401 LIMITER
Q430 DTC144EU
Q698 FMW1 BUFFER&GAIN SWITCH
Q701 2SC4081
Q702 2SC4081 E MODE BUFFER
Q703 FMW1
D656 DAN202U
D659 DAN202U
D658 DAN202U
D667 1SS123
CUT-OFF SW

- **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»	➡»»	➡
PB	⇨	⇨»	⇨»»	⇨



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(J-16) Q776 DTA144EU
(A-3) Q447 DTA144EU
(I-15) Q705 DTA144EU
(I-15) Q452 DTC144EU
(I-4) Q707 FMA2 L/E SWITCH
(C-15) Q416 2SC4081
(I-4) Q708 FMG2 L/E SWITCH
(C-9) Q711 DTA144EU
(D-4) Q712 DTA144EU
(C-13) Q433 2SC4081
S650 OUT IN
D690 DAN202V
(I-16) Q448 DTC144EU
(I-3) Q439 DTA144EU
Q440 2SC4081
(J-16) Q443 DTC144EU
(J-16) Q442 DTC144EU
(J-2) IC662 MC14094 EXPANTION PORT
(I-13) Q497 DTC144EU
D427 DAN202U
D428 DAN202U
D423 DAN202U
D415 DAP202U
(C-10) IC654 CX20095A Y INPUT/OUTPUT AMP
D434 DAP202U
Q643
(B-7) Q645 DTC144ES
IC663 (C-12) NJM2235M REC/PB SWITCH TITLE MIX
D662 1MN10T
Q411 2SA1576 (C-12) PB Y BUFFER
(B-15) Q423 2SC4081
Q735 2SC4081
Q736 DTA143EU
Q733 DTC144EU
Q734 DTC144EU
Q653 DTC144EU
Q672 DTC144EU
D432 DAN202U
(C-10) IC659 NJM2235M Y INPUT SELECT, TITLE Y MIX
D664 (E-15) DAN202U
(G-2) D417 DAN202U
(G-16) Q417 DTA144EU
(J-6) Q690 2SB624
(J-12) Q691 DTC144EU
(D-13) Q415 2SA1576 TITLE Y BUFFER
(J-5) Q778 DTA124EU CUT-OFF FREQUENCY SWITCH
(K-14) Q693 2SC4081 L MODE BUFFER
(J-12) D422 DAN202U
(J-14) Q692 DTC144EU
(J-14) Q429 2SC4081
(K-5) Q694 2SC4081 BUFFER
D654 DAN202U
Q700 2SC3326 SWITCH (L-6)
Q430 DTC144EU (J-5)
IC653 BA401 LIMITER
(G-15) Q697 2SC4081
(F-3) Q696 DTC144EU
(B-14) Q421 2SA1576 VIDEO IN BUFFER
D656 DAN202U
(K-13) D659 DAN202U
D658 DAN202U
D669 (B-6) DTZ9.1
FL657
Q757 (I-17)
Q756 (I-17) DTC144EU
(K-6) D657 1SS123
D655 1SS123
Q701 (L-13) 2SC4081
Q702 (K-6) 2SC4081 E MODE BUFFER
Q703 (J-6) FMW1
(B-5) Q431 2SA1576
(K-14) D657 1SS123
Q770 2SB798
(B-5) Q432 2SC1576 CURRENT LIMITER
(B-5) Q772 DTA144EU RFU DETECT
38
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D
C
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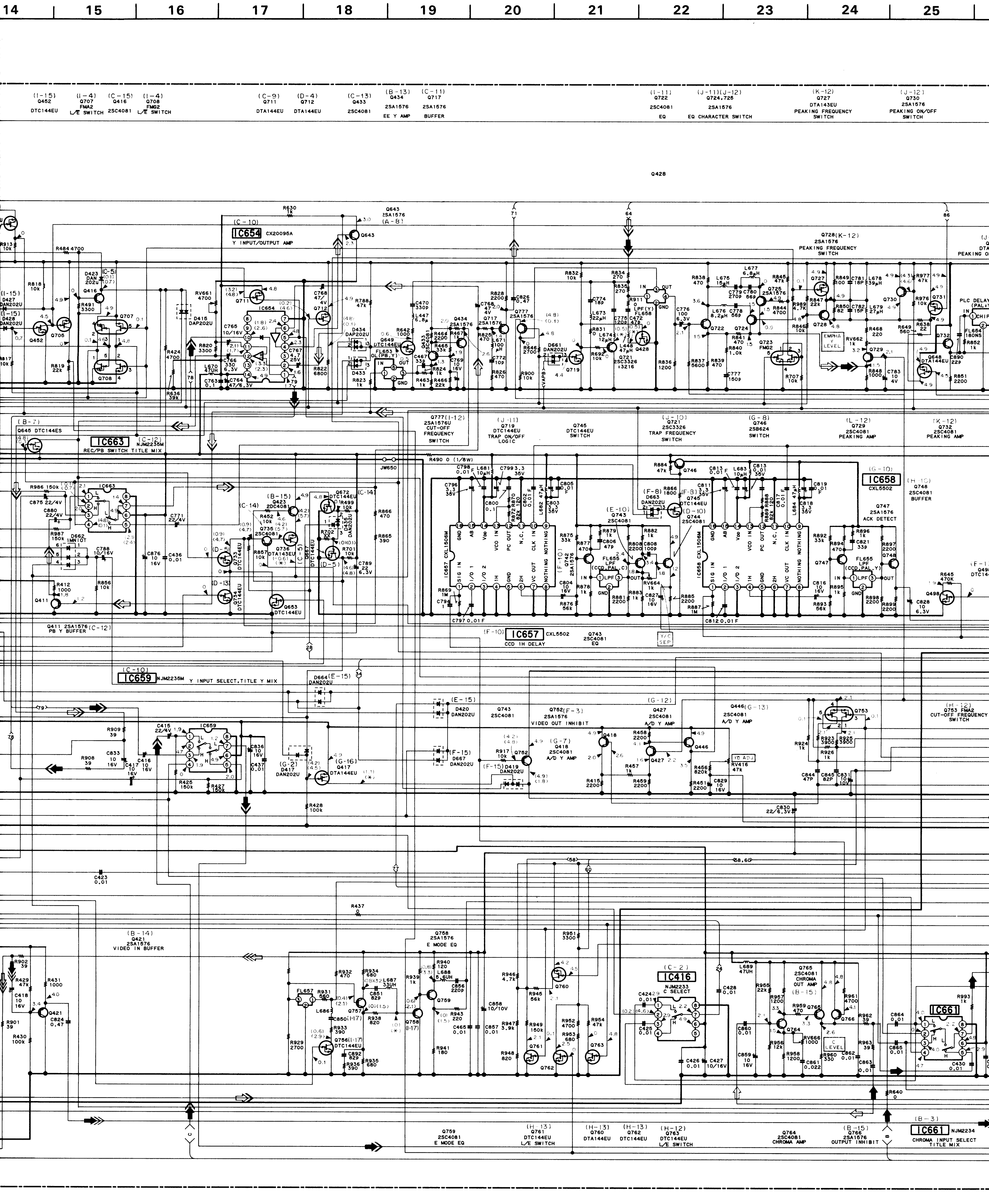
VIDEO (1)　　VIDEO (1)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(I-15) Q452 DTC144EU
(I-4) Q707 FMA2 L/E SWITCH
(C-15) Q416 2SC4081
(I-4) Q708 FMG2 L/E SWITCH
(C-9) Q711 DTA144EU
(D-4) Q712 DTA144EU
(C-13) Q433 2SC4081
(B-13) Q434 2SA1576 EE Y AMP
(C-11) Q717 2SA1576 BUFFER
(I-11) Q722 2SC4081 EQ
(J-11)(J-12) Q724,725 2SA1576 EQ CHARACTER SWITCH
(K-12) Q727 DTA143EU PEAKING FREQUENCY SWITCH
(J-12) Q730 2SA1576 PEAKING ON/OFF SWITCH
Q428
(C-10) IC654 CX20095A Y INPUT/OUTPUT AMP
Q643 2SA1576 (A-8)
Q728(K-12) 2SA1576 PEAKING FREQUENCY SWITCH
PLC DELAY (PAL)
CHIP
EMPHA Y LEVEL
(B-7) Q645 DTC144ES
(C-12) IC663 NJM2235M REC/PB SWITCH TITLE MIX
Q777(I-12) 2SA1576U CUT-OFF FREQUENCY SWITCH
(J-11) Q719 DTC144EU TRAP ON/OFF LOGIC
Q745 DTC144EU SWITCH
(J-10) Q721 2SC3326 TRAP FREQUENCY SWITCH
(G-8) Q746 2SB624 SWITCH
(L-12) Q729 2SC4081 PEAKING AMP
(K-12) Q732 2SC4081 PEAKING AMP
(H-10) Q748 2SC4081 BUFFER
(G-10) IC658 CXL5502
Q747 2SA1576 ACK DETECT
R490 0 (1/8W)
JW650
(F-10) IC657 CXL5502 CCD 1H DELAY
Q743 2SC4081 EQ
Y/C SEP
Q411 2SA1576 PB Y BUFFER (C-12)
(C-10) IC659 NJM2235M Y INPUT SELECT,TITLE Y MIX
D664(E-15) DAN202U
(E-15) D420 DAN202U
Q743 2SC4081
Q752(F-3) 2SA1576 VIDEO OUT INHIBIT
(G-12) Q427 2SC4081 A/D Y AMP
Q446(G-13) 2SC4081 A/D Y AMP
(H-12) Q753 FMA2 CUT-OFF FREQUENCY SWITCH
(G-7) Q418 2SC4081 A/D Y AMP
(F-15) D419 DAN202U
(F-15) D667 DAN202U
(G-2) D417 DAN202U
(G-16) Q417 DTA144EU
YD ADJ
(B-14) Q421 2SA1576 VIDEO IN BUFFER
Q758 2SA1576 E MODE EQ
(C-2) IC416 NJM2233 C SELECT
Q765 2SC4081 CHROMA OUT AMP (B-15)
C LEVEL
IC661
Q756(I-17) DTC144EU
Q757(I-17)
Q758 (I-17)
Q759 2SC4081 E MODE EQ
(H-13) Q761 DTC144EU L/E SWITCH
(H-13) Q760 DTA144EU
(H-13) Q762 DTC144EU
(H-12) Q763 DTC144EU L/E SWITCH
Q764 2SC4081 CHROMA AMP
(B-15) Q766 2SA1576 OUTPUT INHIBIT
(B-3) IC661 NJM2234 CHROMA INPUT SELECT TITLE MIX
CXL1506M
SIG IN
I/O 1
I/O 2
1H
GND
2H
VC OUT
NOTHING
CLK IN
N.C.
PC OUT
VCO IN
VDD
AB
FL655 LPF (CCD,PAL,C)
FL655 LPF (CCD,PAL,Y)
FL653 LPF(PB,Y)
FL658 LPF(Y)
FL657
FL654 180NS
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58,60
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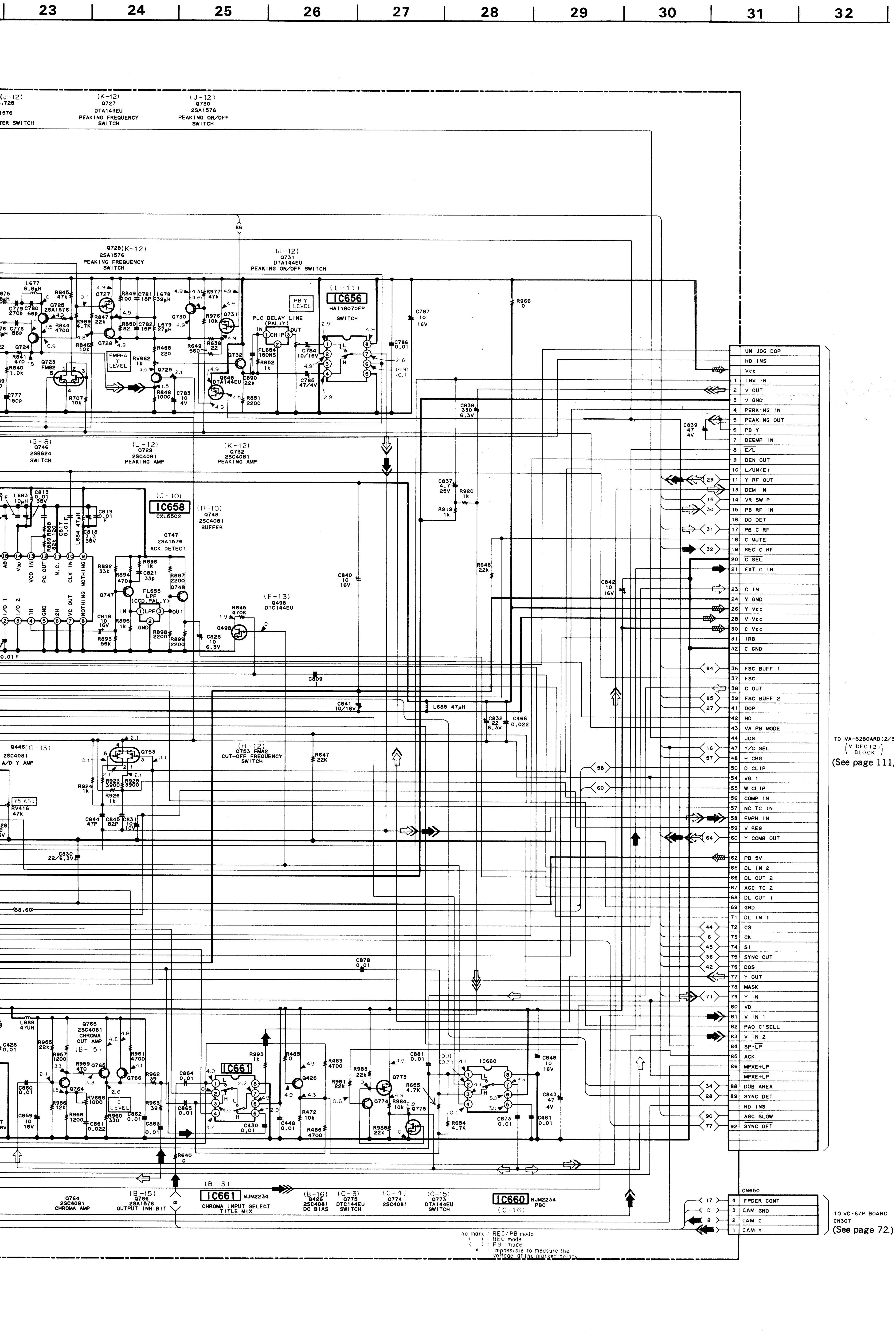
C
B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Q727 DTA143EU PEAKING FREQUENCY SWITCH
Q730 2SA1576 PEAKING ON/OFF SWITCH
Q728 2SA1576 PEAKING FREQUENCY SWITCH
Q731 DTA144EU PEAKING ON/OFF SWITCH
IC656 HA118070FP SWITCH
PLC DELAY LINE (PAL:Y)
PB Y LEVEL
EMPHA Y LEVEL
Q746 2SB624 SWITCH
Q729 2SC4081 PEAKING AMP
Q732 2SC4081 PEAKING AMP
IC658 CXL5502
Q748 2SC4081 BUFFER
Q747 2SA1576 ACK DETECT
Q498 DTC144EU
Q446 2SC4081 A/D Y AMP
Q753 FMA2 CUT-OFF FREQUENCY SWITCH
Q765 2SC4081 CHROMA OUT AMP
IC661
IC660
Q764 2SC4081 CHROMA AMP
Q766 2SA1576 OUTPUT INHIBIT
IC661 NJM2234 CHROMA INPUT SELECT TITLE MIX
Q426 2SC4081 DC BIAS
Q775 DTC144EU SWITCH
Q774 2SC4081
Q773 DTA144EU SWITCH
IC660 NJM2234 PBC
UN JOG DOP
HD INS
Vcc
1 INV IN
2 V OUT
3 V GND
4 PERKING IN
5 PEAKING OUT
6 PB Y
7 DEEMP IN
8 E/L
9 DEN OUT
10 L/UN(E)
11 Y RF OUT
13 DEM IN
14 VR SW P
15 PB RF IN
16 DD DET
17 PB C RF
18 C MUTE
19 REC C RF
20 C SEL
21 EXT C IN
23 C IN
24 Y GND
26 Y Vcc
28 V Vcc
30 C Vcc
31 IRB
32 C GND
36 FSC BUFF 1
37 FSC
38 C OUT
39 FSC BUFF 2
41 DOP
42 HD
43 VA PB MODE
44 JOG
47 Y/C SEL
48 H CHG
50 D CLIP
54 VG 1
55 W CLIP
56 COMP IN
57 NC TC IN
58 EMPH IN
59 V REG
60 Y COMB OUT
62 PB 5V
65 DL IN 2
66 DL OUT 2
67 AGC TC 2
68 DL OUT 1
69 GND
71 DL IN 1
72 CS
73 CK
74 SI
75 SYNC OUT
76 DOS
77 Y OUT
78 MASK
79 Y IN
80 VD
81 V IN 1
82 PAO C'SELL
83 V IN 2
84 SP·LP
85 ACK
86 MPXE+LP
MPXE+LP
88 DUB AREA
89 SYNC DET
HD INS
AGC SLOW
92 SYNC DET
TO VA-62BOARD(2/3) (VIDEO(2) BLOCK)
(See page 111, 113.)
CN650
4 FPDER CONT
3 CAM GND
2 CAM C
1 CAM Y
TO VC-67P BOARD CN307
(See page 72.)
no mark : REC/PB mode
( ) : REC mode
〈 〉 : PB mode
* : impossible to measure the voltage of the marked points

DIODE

D410	8-719-941-09	DIODE DAP202U
D415	8-719-421-30	DIODE MA141A
D417	8-719-941-86	DIODE DAN202U
D419	8-719-941-09	DIODE DAP202U
D420	8-719-941-86	DIODE DAN202U
D422	8-719-941-86	DIODE DAN202U
D423	8-719-941-86	DIODE DAN202U
D427	8-719-941-86	DIODE DAN202U
D428	8-719-941-86	DIODE DAN202U
D429	8-719-941-86	DIODE DAN202U
D432	8-719-941-86	DIODE DAN202U
D434	8-719-941-09	DIODE DAP202U
D435	8-719-941-86	DIODE DAN202U
D436	8-719-941-86	DIODE DAN202U
D437	8-719-941-86	DIODE DAN202U
D551	8-719-404-46	DIODE MA110
D552	8-719-941-86	DIODE DAN202U
D553	8-719-941-86	DIODE DAN202U
D554	8-719-404-46	DIODE MA110
D650	8-719-941-86	DIODE DAN202U
D651	8-719-941-86	DIODE DAN202U
D652	8-719-941-86	DIODE DAN202U
D653	8-719-941-86	DIODE DAN202U
D654	8-719-941-86	DIODE DAN202U
D655	8-719-800-76	DIODE 1SS226
D656	8-719-941-86	DIODE DAN202U
D657	8-719-800-76	DIODE 1SS226
D658	8-719-941-86	DIODE DAN202U
D659	8-719-941-86	DIODE DAN202U
D661	8-719-941-86	DIODE DAN202U
D662	8-719-951-22	DIODE IMN10
D663	8-719-941-86	DIODE DAN202U
D664	8-719-941-86	DIODE DAN202U
D667	8-719-941-86	DIODE DAN202U
D669	8-719-977-22	DIODE DTZ9.1
D670	8-719-977-22	DIODE DTZ9.1
D671	8-719-977-22	DIODE DTZ9.1
D672	8-719-977-22	DIODE DTZ9.1
D673	8-719-800-76	DIODE 1SS226
D674	8-719-977-22	DIODE DTZ9.1
D675	8-719-977-22	DIODE DTZ9.1
D676	8-719-977-22	DIODE DTZ9.1
D677	8-719-977-22	DIODE DTZ9.1
D678	8-719-977-22	DIODE DTZ9.1
D679	8-719-977-22	DIODE DTZ9.1
D680	8-719-977-22	DIODE DTZ9.1
D681	8-719-977-22	DIODE DTZ9.1
D690	8-719-941-86	DIODE DAN202U

IC

IC416	8-759-710-09	IC NJM2233AM
IC551	8-759-009-07	IC MC14053BF
IC553	8-759-998-98	IC LM358D
IC554	8-759-932-54	IC MC14066BF
IC555	8-759-701-02	IC NJM2073M
IC650	8-752-036-19	IC CXA1207R
IC651	8-752-036-20	IC CXA1208R
IC652	8-759-605-61	IC CXA1203N
IC653	8-759-925-60	IC BA401
IC654	8-752-009-51	IC CX20095A
IC656	8-759-320-76	IC HA118070FP
IC657	8-752-333-24	IC CXL1506M
IC658	8-752-333-24	IC CXL1506M
IC659	8-759-710-29	IC NJM2235M
IC660	8-759-710-07	IC NJM2234M
IC661	8-759-710-07	IC NJM2234M
IC662	8-759-009-22	IC MC14094BF
IC663	8-759-710-29	IC NJM2235M

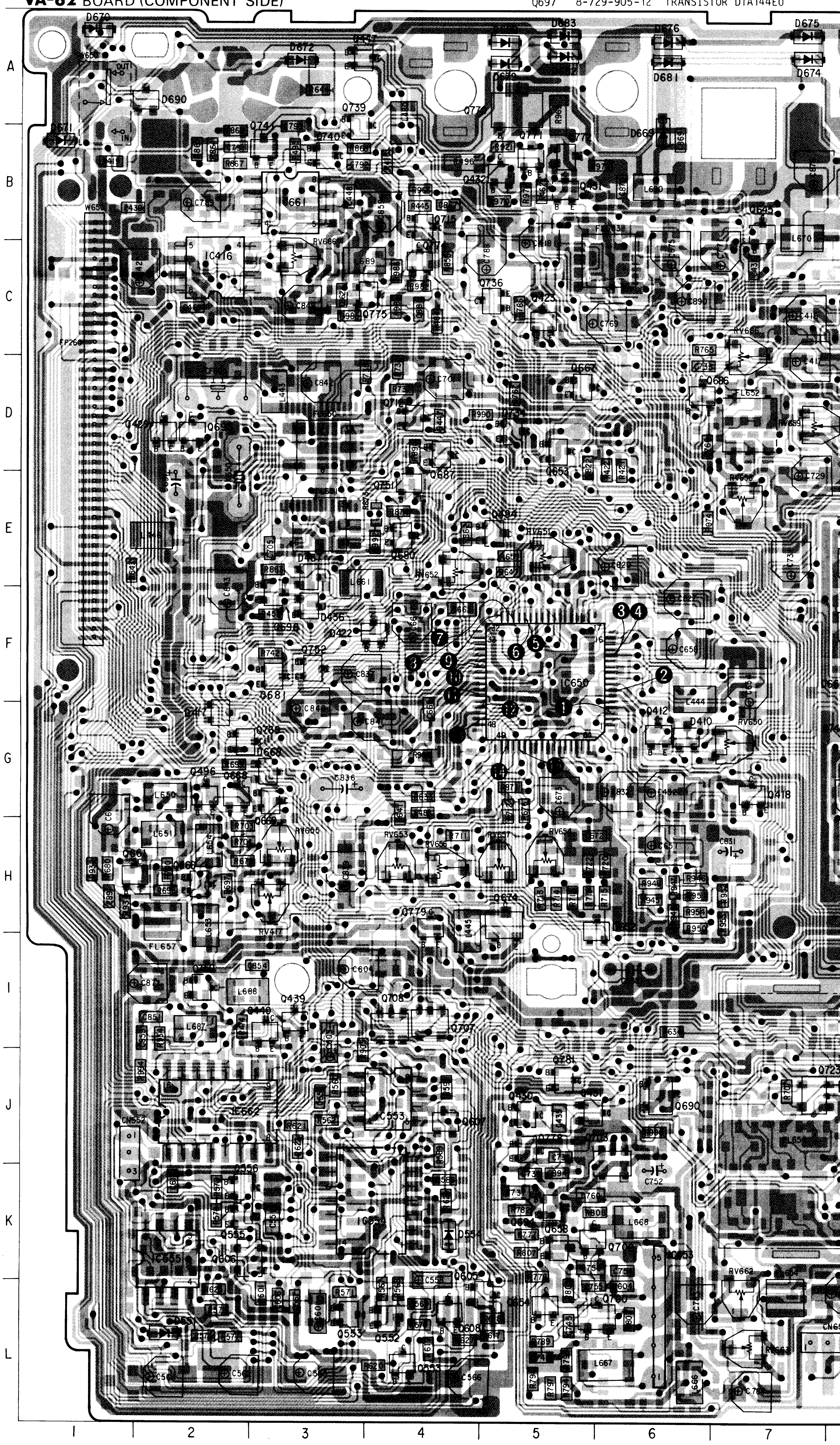
TRANSISTOR

Q411	8-729-905-23	TRANSISTOR 2SA1576-R
Q415	8-729-905-23	TRANSISTOR 2SA1576-R
Q416	8-729-905-35	TRANSISTOR 2SC4081-R
Q417	8-729-905-12	TRANSISTOR DTA144EU
Q418	8-729-905-35	TRANSISTOR 2SC4081-R
Q421	8-729-905-23	TRANSISTOR 2SA1576-R
Q422	8-729-905-18	TRANSISTOR DTC144EU
Q423	8-729-905-35	TRANSISTOR 2SC4081-R
Q426	8-729-905-35	TRANSISTOR 2SC4081-R
Q427	8-729-905-35	TRANSISTOR 2SC4081-R
Q428	8-729-905-XX	TRANSISTOR DTC114TU
Q429	8-729-905-35	TRANSISTOR 2SC4081-R
Q430	8-729-905-18	TRANSISTOR DTC144EU
Q431	8-729-905-23	TRANSISTOR 2SA1576-R
Q432	8-729-905-23	TRANSISTOR 2SA1576-R
Q433	8-729-905-35	TRANSISTOR 2SC4081-R
Q434	8-729-905-23	TRANSISTOR 2SA1576-R
Q439	8-729-905-12	TRANSISTOR DTA144EU
Q440	8-729-905-35	TRANSISTOR 2SC4081-R
Q442	8-729-905-18	TRANSISTOR DTC144EU
Q443	8-729-905-18	TRANSISTOR DTC144EU
Q444	8-729-905-35	TRANSISTOR 2SC4081-R
Q446	8-729-905-35	TRANSISTOR 2SC4081-R
Q447	8-729-905-12	TRANSISTOR DTA144EU
Q448	8-729-905-18	TRANSISTOR DTC144EU
Q452	8-729-905-18	TRANSISTOR DTC144EU
Q456	8-729-905-18	TRANSISTOR DTC144EU
Q469	8-729-905-18	TRANSISTOR DTC144EU
Q490	8-729-905-35	TRANSISTOR 2SC4081-R
Q491	8-729-905-12	TRANSISTOR DTA144EU
Q493	8-729-905-12	TRANSISTOR DTA144EU
Q494	8-729-905-35	TRANSISTOR 2SC4081-R
Q496	8-729-905-35	TRANSISTOR 2SC4081-R
Q497	8-729-905-18	TRANSISTOR DTC144EU
Q498	8-729-905-18	TRANSISTOR DTC144EU
Q551	8-729-905-23	TRANSISTOR 2SA1576-R
Q552	8-729-905-23	TRANSISTOR 2SA1576-R
Q553	8-729-905-35	TRANSISTOR 2SC4081-R
Q554	8-729-905-35	TRANSISTOR 2SC4081-R
Q555	8-729-905-35	TRANSISTOR 2SC4081-R
Q556	8-729-905-35	TRANSISTOR 2SC4081-R
Q557	8-729-905-18	TRANSISTOR DTC144EU
Q558	8-729-905-12	TRANSISTOR DTA144EU
Q559	8-729-905-23	TRANSISTOR 2SA1576-R
Q560	8-729-905-18	TRANSISTOR DTC144EU
Q561	8-729-907-26	TRANSISTOR IMX1
Q562	8-729-904-07	TRANSISTOR FMG2
Q603	8-729-905-35	TRANSISTOR 2SC4081-R
Q606	8-729-902-93	TRANSISTOR FMG4
Q607	8-729-922-94	TRANSISTOR DTC143TU
Q608	8-729-905-23	TRANSISTOR 2SA1576-R
Q643	8-729-905-23	TRANSISTOR 2SA1576-R
Q645	8-729-905-18	TRANSISTOR DTC144EU
Q647	8-729-905-18	TRANSISTOR DTC144EU
Q648	8-729-905-12	TRANSISTOR DTA144EU
Q649	8-729-905-18	TRANSISTOR DTC144EU
Q653	8-729-905-18	TRANSISTOR DTC144EU
Q655	8-729-905-12	TRANSISTOR DTA144EU
Q657	8-729-905-35	TRANSISTOR 2SC4081-R
Q658	8-729-905-35	TRANSISTOR 2SC4081-R
Q659	8-729-905-35	TRANSISTOR 2SC4081-R
Q660	8-729-905-35	TRANSISTOR 2SC4081-R
Q661	8-729-905-12	TRANSISTOR DTA144EU
Q662	8-729-905-12	TRANSISTOR DTA144EU
Q665	8-729-905-45	TRANSISTOR DTA143EU
Q666	8-729-905-23	TRANSISTOR 2SA1576-R
Q667	8-729-905-18	TRANSISTOR DTC144EU
Q668	8-729-905-35	TRANSISTOR 2SC4081-R
Q669	8-729-905-12	TRANSISTOR DTA144EU
Q670	8-729-903-10	TRANSISTOR FMW1
Q671	8-729-905-23	TRANSISTOR 2SA1576-R
Q672	8-729-905-18	TRANSISTOR DTC144EU
Q673	8-729-905-12	TRANSISTOR DTA144EU
Q674	8-729-141-48	TRANSISTOR 2SB624-BV345
Q675	8-729-905-18	TRANSISTOR DTC144EU
Q676	8-729-905-12	TRANSISTOR DTA144EU
Q677	8-729-905-12	TRANSISTOR DTA144EU
Q678	8-729-202-38	TRANSISTOR 2SC3326N
Q679	8-729-202-38	TRANSISTOR 2SC3326N
Q680	8-729-905-35	TRANSISTOR 2SC4081-R
Q681	8-729-905-35	TRANSISTOR 2SC4081-R
Q683	8-729-905-23	TRANSISTOR 2SA1576-R
Q684	8-729-905-18	TRANSISTOR DTC144EU
Q685	8-729-905-12	TRANSISTOR DTA144EU
Q686	8-729-905-35	TRANSISTOR 2SC4081-R
Q687	8-729-905-35	TRANSISTOR 2SC4081-R
Q688	8-729-905-35	TRANSISTOR 2SC4081-R
Q689	8-729-905-35	TRANSISTOR 2SC4081-R
Q690	8-729-141-48	TRANSISTOR 2SB624-BV345
Q691	8-729-905-18	TRANSISTOR DTC144EU
Q692	8-729-905-18	TRANSISTOR DTC144EU
Q693	8-729-905-35	TRANSISTOR 2SC4081-R
Q694	8-729-905-35	TRANSISTOR 2SC4081-R
Q695	8-729-905-12	TRANSISTOR DTA144EU
Q696	8-729-905-18	TRANSISTOR DTC144EU
Q697	8-729-905-12	TRANSISTOR DTA144EU

VA-62 (Y/CHROMA SIGNAL PROCESS, AUDIO SIGNAL PROCESS) PRINTED WIRING BOARD

—Ref. No. VA-62 BOARD : 1000 series—

VA-62 BOARD (COMPONENT SIDE)



905-12	TRANSISTOR DTA144EU
905-18	TRANSISTOR DTC144EU
905-18	TRANSISTOR DTC144EU
905-12	TRANSISTOR DTA144EU
905-35	TRANSISTOR 2SC4081-R
905-35	TRANSISTOR 2SC4081-R
905-35	TRANSISTOR 2SC4081-R
905-35	TRANSISTOR 2SC4081-R
905-12	TRANSISTOR DTA144EU
905-12	TRANSISTOR DTA144EU
905-45	TRANSISTOR DTA143EU
905-23	TRANSISTOR 2SA1576-R
905-18	TRANSISTOR DTC144EU
905-35	TRANSISTOR 2SC4081-R
905-12	TRANSISTOR DTA144EU
903-10	TRANSISTOR FMW1
905-23	TRANSISTOR 2SA1576-R
905-18	TRANSISTOR DTC144EU

ROCESS) PRINTED WIRING BOARD

Q673	8-729-905-12	TRANSISTOR DTA144EU
Q674	8-729-141-48	TRANSISTOR 2SB624-BV345
Q675	8-729-905-18	TRANSISTOR DTC144EU
Q676	8-729-905-12	TRANSISTOR DTA144EU
Q677	8-729-905-12	TRANSISTOR DTA144EU
Q678	8-729-202-38	TRANSISTOR 2SC3326N
Q679	8-729-202-38	TRANSISTOR 2SC3326N
Q680	8-729-905-35	TRANSISTOR 2SC4081-R
Q681	8-729-905-35	TRANSISTOR 2SC4081-R
Q683	8-729-905-23	TRANSISTOR 2SA1576-R
Q684	8-729-905-18	TRANSISTOR DTC144EU
Q685	8-729-905-12	TRANSISTOR DTA144EU
Q686	8-729-905-35	TRANSISTOR 2SC4081-R
Q687	8-729-905-35	TRANSISTOR 2SC4081-R
Q688	8-729-905-35	TRANSISTOR 2SC4081-R
Q689	8-729-905-35	TRANSISTOR 2SC4081-R
Q690	8-729-141-48	TRANSISTOR 2SB624-BV345
Q691	8-729-905-18	TRANSISTOR DTC144EU
Q692	8-729-905-18	TRANSISTOR DTC144EU
Q693	8-729-905-35	TRANSISTOR 2SC4081-R
Q694	8-729-905-35	TRANSISTOR 2SC4081-R
Q695	8-729-905-12	TRANSISTOR DTA144EU
Q696	8-729-905-18	TRANSISTOR DTC144EU
Q697	8-729-905-12	TRANSISTOR DTA144EU

Q698	8-729-903-10	TRANSISTOR FMW1
Q700	8-729-202-38	TRANSISTOR 2SC3326N
Q701	8-729-905-35	TRANSISTOR 2SC4081-R
Q702	8-729-905-35	TRANSISTOR 2SC4081-R
Q703	8-729-903-10	TRANSISTOR FMW1
Q680	8-729-905-35	TRANSISTOR 2SC4081-R
Q681	8-729-905-35	TRANSISTOR 2SC4081-R
Q683	8-729-905-23	TRANSISTOR 2SA1576-R
Q684	8-729-905-18	TRANSISTOR DTC144EU
Q685	8-729-905-12	TRANSISTOR DTA144EU
Q686	8-729-905-35	TRANSISTOR 2SC4081-R
Q687	8-729-905-35	TRANSISTOR 2SC4081-R
Q688	8-729-905-35	TRANSISTOR 2SC4081-R
Q689	8-729-905-35	TRANSISTOR 2SC4081-R
Q690	8-729-141-48	TRANSISTOR 2SB624-BV345
Q691	8-729-905-18	TRANSISTOR DTC144EU
Q692	8-729-905-18	TRANSISTOR DTC144EU
Q693	8-729-905-35	TRANSISTOR 2SC4081-R
Q694	8-729-905-35	TRANSISTOR 2SC4081-R
Q695	8-729-905-12	TRANSISTOR DTA144EU
Q696	8-729-905-18	TRANSISTOR DTC144EU
Q697	8-729-905-12	TRANSISTOR DTA144EU

Q698	8-729-903-10	TRANSISTOR FMW1
Q700	8-729-202-38	TRANSISTOR 2SC3326N
Q701	8-729-905-35	TRANSISTOR 2SC4081-R
Q702	8-729-905-35	TRANSISTOR 2SC4081-R
Q703	8-729-903-10	TRANSISTOR FMW1
Q705	8-729-905-12	TRANSISTOR DTA144EU
Q707	8-729-904-20	TRANSISTOR FMA2
Q708	8-729-904-07	TRANSISTOR FMG2
Q711	8-729-905-12	TRANSISTOR DTA144EU
Q712	8-729-905-12	TRANSISTOR DTA144EU
Q717	8-729-905-23	TRANSISTOR 2SA1576-R
Q719	8-729-905-18	TRANSISTOR DTC144EU
Q721	8-729-202-38	TRANSISTOR 2SC3326N
Q722	8-729-905-35	TRANSISTOR 2SC4081-R
Q723	8-729-904-07	TRANSISTOR FMG2
Q724	8-729-905-23	TRANSISTOR 2SA1576-R
Q725	8-729-905-23	TRANSISTOR 2SA1576-R
Q727	8-729-905-45	TRANSISTOR DTA143EU
Q728	8-729-905-23	TRANSISTOR 2SA1576-R
Q729	8-729-905-35	TRANSISTOR 2SC4081-R
Q730	8-729-905-23	TRANSISTOR 2SA1576-R
Q731	8-729-905-12	TRANSISTOR DTA144EU

Q732	8-729-905-35	TRA
Q733	8-729-905-18	TRA
Q734	8-729-905-18	TRA
Q735	8-729-905-35	TRA
Q736	8-729-905-45	TRA
Q737	8-729-905-35	TRA
Q738	8-729-905-35	TRA
Q742	8-729-905-23	TRA
Q743	8-729-905-35	TRA
Q744	8-729-905-35	TRA
Q745	8-729-905-18	TRA
Q746	8-729-141-48	TRA
Q747	8-729-905-23	TRA
Q748	8-729-905-35	TRA
Q751	8-729-905-35	TRA
Q752	8-729-905-23	TRA
Q753	8-729-904-20	TRA
Q756	8-729-905-18	TRA
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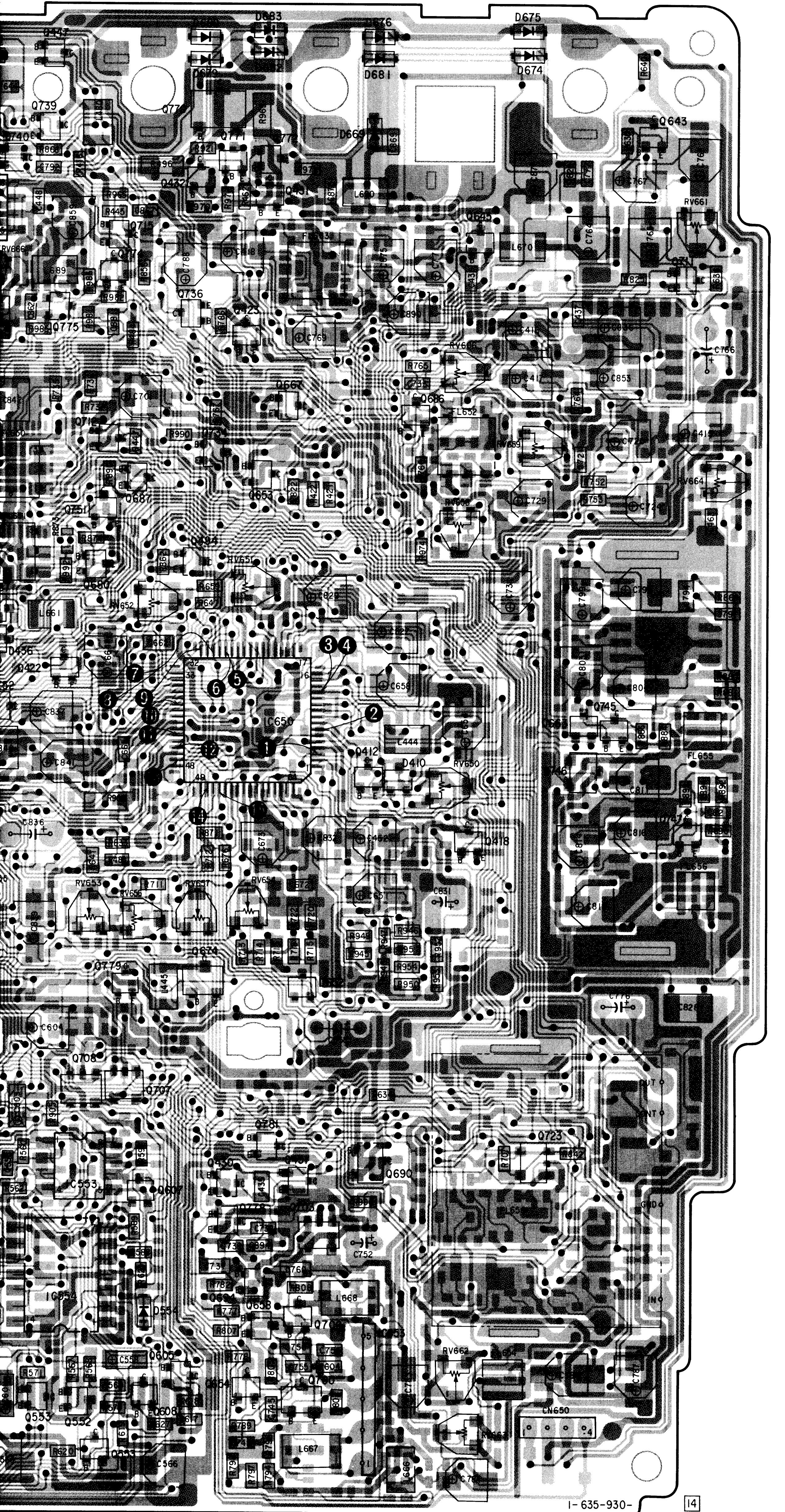
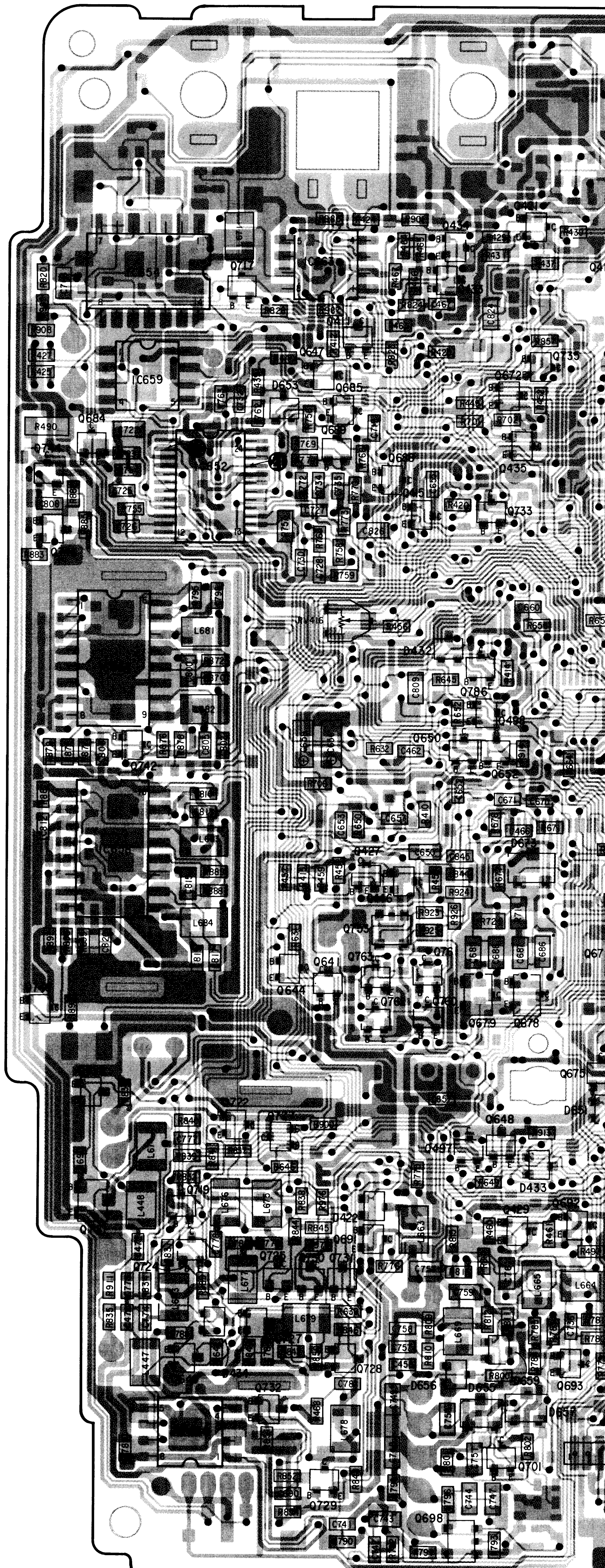
Q760	8-729-905-12	TRA



VA-62 BOARD (CONDUCTOR SIDE)



Q698	8-729-903-10	TRANSISTOR FMW1
Q700	8-729-202-38	TRANSISTOR 2SC3326N
Q701	8-729-905-35	TRANSISTOR 2SC4081-R
Q702	8-729-905-35	TRANSISTOR 2SC4081-R
Q703	8-729-903-10	TRANSISTOR FMW1
Q680	8-729-905-35	TRANSISTOR 2SC4081-R
Q681	8-729-905-35	TRANSISTOR 2SC4081-R
Q683	8-729-905-23	TRANSISTOR 2SA1576-R
Q684	8-729-905-18	TRANSISTOR DTC144EU
Q685	8-729-905-12	TRANSISTOR DTA144EU
Q686	8-729-905-35	TRANSISTOR 2SC4081-R
Q687	8-729-905-35	TRANSISTOR 2SC4081-R
Q688	8-729-905-35	TRANSISTOR 2SC4081-R
Q689	8-729-905-35	TRANSISTOR 2SC4081-R
Q690	8-729-141-48	TRANSISTOR 2SB624-BV345
Q691	8-729-905-18	TRANSISTOR DTC144EU
Q692	8-729-905-18	TRANSISTOR DTC144EU
Q693	8-729-905-35	TRANSISTOR 2SC4081-R
Q694	8-729-905-35	TRANSISTOR 2SC4081-R
Q695	8-729-905-12	TRANSISTOR DTA144EU
Q696	8-729-905-18	TRANSISTOR DTC144EU
Q697	8-729-905-12	TRANSISTOR DTA144EU
Q698	8-729-903-10	TRANSISTOR FMW1
Q700	8-729-202-38	TRANSISTOR 2SC3326N
Q701	8-729-905-35	TRANSISTOR 2SC4081-R
Q702	8-729-905-35	TRANSISTOR 2SC4081-R
Q703	8-729-903-10	TRANSISTOR FMW1
Q705	8-729-905-12	TRANSISTOR DTA144EU
Q707	8-729-904-20	TRANSISTOR FMA2
Q708	8-729-904-07	TRANSISTOR FMG2
Q711	8-729-905-12	TRANSISTOR DTA144EU
Q712	8-729-905-12	TRANSISTOR DTA144EU
Q717	8-729-905-23	TRANSISTOR 2SA1576-R
Q719	8-729-905-18	TRANSISTOR DTC144EU
Q721	8-729-202-38	TRANSISTOR 2SC3326N
Q722	8-729-905-35	TRANSISTOR 2SC4081-R
Q723	8-729-904-07	TRANSISTOR FMG2
Q724	8-729-905-23	TRANSISTOR 2SA1576-R
Q725	8-729-905-23	TRANSISTOR 2SA1576-R
Q727	8-729-905-45	TRANSISTOR DTA143EU
Q728	8-729-905-23	TRANSISTOR 2SA1576-R
Q729	8-729-905-35	TRANSISTOR 2SC4081-R
Q730	8-729-905-23	TRANSISTOR 2SA1576-R
Q731	8-729-905-12	TRANSISTOR DTA144EU
Q732	8-729-905-35	TRANSISTOR 2SC4081-R
Q733	8-729-905-18	TRANSISTOR DTC144EU
Q734	8-729-905-18	TRANSISTOR DTC144EU
Q735	8-729-905-35	TRANSISTOR 2SC4081-R
Q736	8-729-905-45	TRANSISTOR DTA143EU
Q737	8-729-905-35	TRANSISTOR 2SC4081-R
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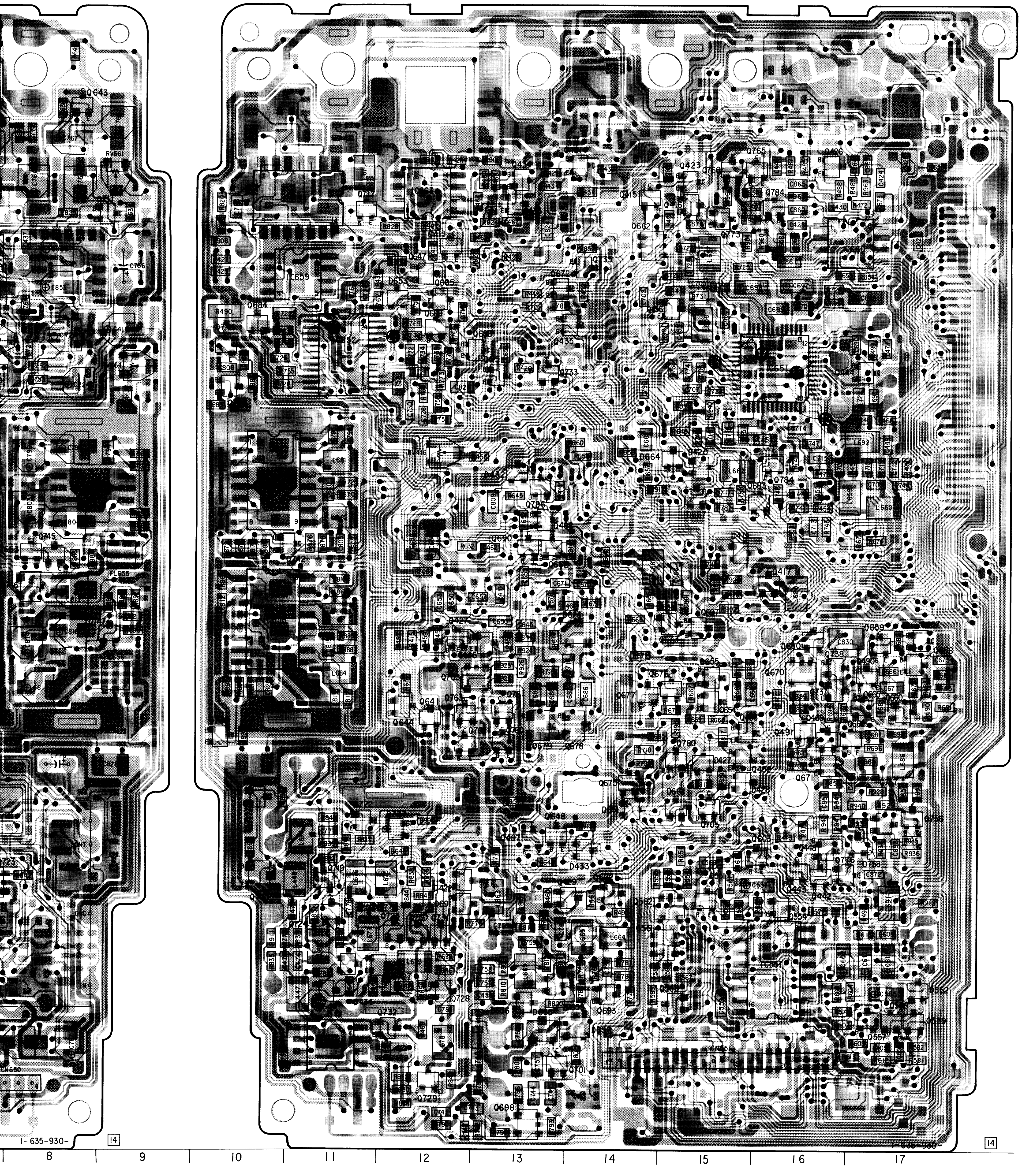
Q742	8-729-905-23	TRANSISTOR 2SA1576-R
Q743	8-729-905-35	TRANSISTOR 2SC4081-R
Q744	8-729-905-35	TRANSISTOR 2SC4081-R
Q745	8-729-905-18	TRANSISTOR DTC144EU
Q746	8-729-141-48	TRANSISTOR 2SB624-BV345
Q747	8-729-905-23	TRANSISTOR 2SA1576-R
Q748	8-729-905-35	TRANSISTOR 2SC4081-R
Q751	8-729-905-35	TRANSISTOR 2SC4081-R
Q752	8-729-905-23	TRANSISTOR 2SA1576-R
Q753	8-729-904-20	TRANSISTOR FMA2
Q756	8-729-905-18	TRANSISTOR DTC144EU
Q757	8-729-905-35	TRANSISTOR 2SC4081-R
Q758	8-729-905-23	TRANSISTOR 2SA1576-R
Q759	8-729-905-35	TRANSISTOR 2SC4081-R
Q760	8-729-905-12	TRANSISTOR DTA144EU
Q761	8-729-905-18	TRANSISTOR DTC144EU
Q762	8-729-905-18	TRANSISTOR DTC144EU
Q763	8-729-905-18	TRANSISTOR DTC144EU
Q764	8-729-905-35	TRANSISTOR 2SC4081-R
Q765	8-729-905-35	TRANSISTOR 2SC4081-R
Q766	8-729-905-23	TRANSISTOR 2SA1576-R
Q770	8-729-101-07	TRANSISTOR 2SB798-DL
Q772	8-729-905-12	TRANSISTOR DTA144EU
Q773	8-729-905-12	TRANSISTOR DTA144EU
Q774	8-729-905-35	TRANSISTOR 2SC4081-R
Q775	8-729-905-18	TRANSISTOR DTC144EU
Q776	8-729-905-12	TRANSISTOR DTA144EU
Q777	8-729-905-23	TRANSISTOR 2SA1576-R
Q784	8-729-905-35	TRANSISTOR 2SC4081-R
Q786	8-729-905-18	TRANSISTOR DTC144EU

VA-62 BOARD (CONDUCTOR SIDE)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Q423
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Q784
Q426
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Q773
Q435
Q733
IC651
Q424
D664
Q429
L692
L660
D419
Q417
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Q701
Q693
Q656
Q557
Q559
Q562
L664
IC554
14
8
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DIODE

D410	8-719-941-09	DIODE DAP202U
D415	8-719-421-30	DIODE MA141A
D417	8-719-941-86	DIODE DAN202U
D419	8-719-941-09	DIODE DAP202U
D420	8-719-941-86	DIODE DAN202U
D422	8-719-941-86	DIODE DAN202U
D423	8-719-941-86	DIODE DAN202U
D427	8-719-941-86	DIODE DAN202U
D428	8-719-941-86	DIODE DAN202U
D429	8-719-941-86	DIODE DAN202U
D432	8-719-941-86	DIODE DAN202U
D434	8-719-941-09	DIODE DAP202U
D435	8-719-941-86	DIODE DAN202U
D436	8-719-941-86	DIODE DAN202U
D437	8-719-941-86	DIODE DAN202U
D551	8-719-404-46	DIODE MA110
D552	8-719-941-86	DIODE DAN202U
D553	8-719-941-86	DIODE DAN202U
D554	8-719-404-46	DIODE MA110
D650	8-719-941-86	DIODE DAN202U
D651	8-719-941-86	DIODE DAN202U
D652	8-719-941-86	DIODE DAN202U
D653	8-719-941-86	DIODE DAN202U
D654	8-719-941-86	DIODE DAN202U
D655	8-719-800-76	DIODE 1SS226
D656	8-719-941-86	DIODE DAN202U
D657	8-719-800-76	DIODE 1SS226
D658	8-719-941-86	DIODE DAN202U
D659	8-719-941-86	DIODE DAN202U
D661	8-719-941-86	DIODE DAN202U
D662	8-719-951-22	DIODE IMN10
D663	8-719-941-86	DIODE DAN202U
D664	8-719-941-86	DIODE DAN202U
D667	8-719-941-86	DIODE DAN202U
D669	8-719-977-22	DIODE DTZ9.1
D670	8-719-977-22	DIODE DTZ9.1
D671	8-719-977-22	DIODE DTZ9.1
D672	8-719-977-22	DIODE DTZ9.1
D673	8-719-800-76	DIODE 1SS226
D674	8-719-977-22	DIODE DTZ9.1
D675	8-719-977-22	DIODE DTZ9.1
D676	8-719-977-22	DIODE DTZ9.1
D677	8-719-977-22	DIODE DTZ9.1
D678	8-719-977-22	DIODE DTZ9.1
D679	8-719-977-22	DIODE DTZ9.1
D680	8-719-977-22	DIODE DTZ9.1
D681	8-719-977-22	DIODE DTZ9.1
D690	8-719-941-86	DIODE DAN202U

IC

IC416	8-759-710-09	IC NJM2233AM
IC551	8-759-009-07	IC MC14053BF
IC553	8-759-998-98	IC LM358D
IC554	8-759-932-54	IC MC14066BF
IC555	8-759-701-02	IC NJM2073M
IC650	8-752-036-19	IC CXA1207R
IC651	8-752-036-20	IC CXA1208R
IC652	8-759-605-61	IC CXA1203N
IC653	8-759-925-60	IC BA401
IC654	8-752-009-51	IC CX20095A
IC656	8-759-320-76	IC HA118070FP
IC657	8-752-333-24	IC CXL1506M
IC658	8-752-333-24	IC CXL1506M
IC659	8-759-710-29	IC NJM2235M
IC660	8-759-710-07	IC NJM2234M
IC661	8-759-710-07	IC NJM2
IC662	8-759-009-22	IC MC14
IC663	8-759-710-29	IC NJM2

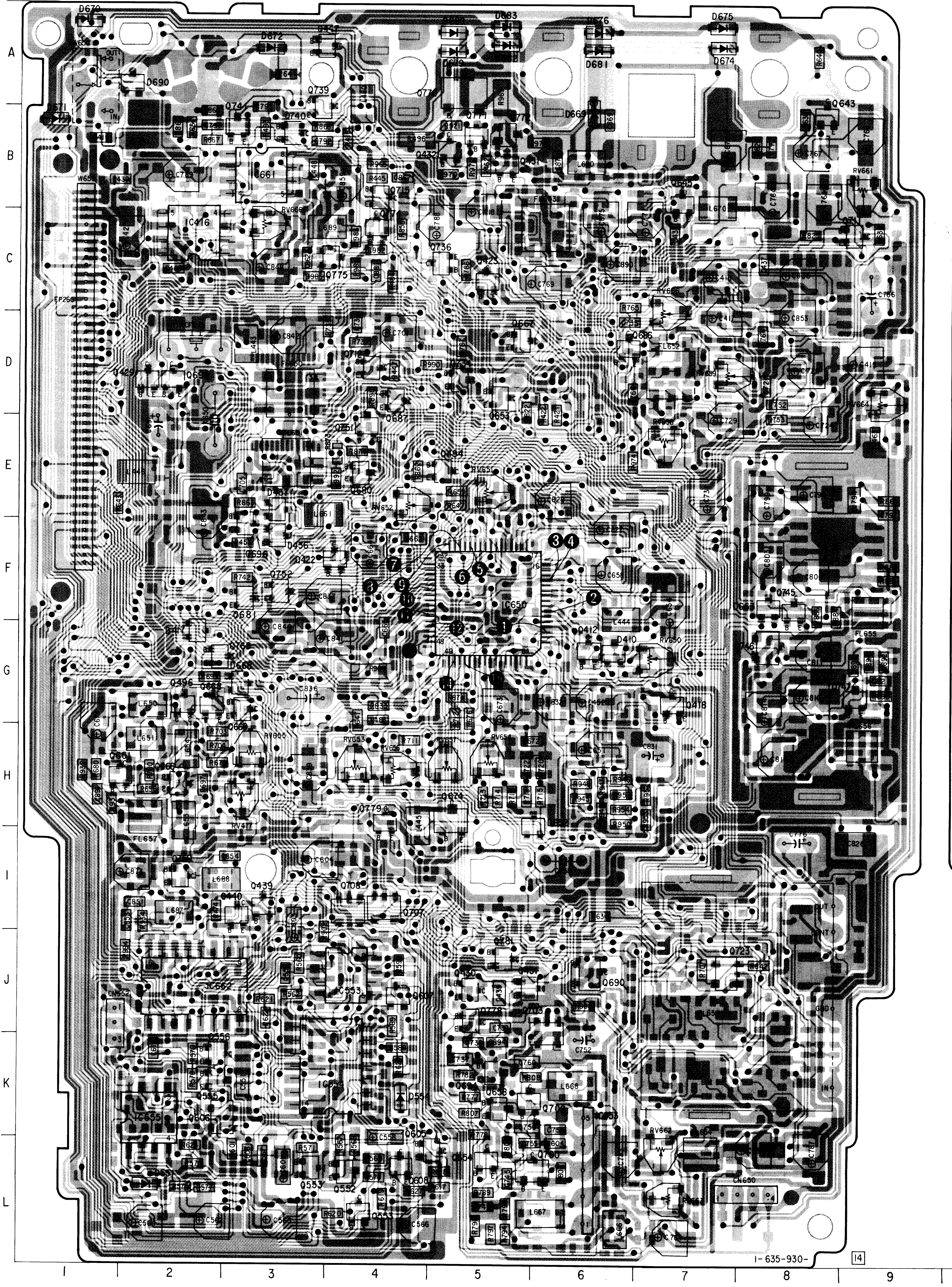
TRANSISTOR

Q411	8-729-905-23	TRANSIS
Q415	8-729-905-23	TRANSIS
Q416	8-729-905-35	TRANSIS
Q417	8-729-905-12	TRANSIS
Q418	8-729-905-35	TRANSIS
Q421	8-729-905-23	TRANSIS
Q422	8-729-905-18	TRANSIS
Q423	8-729-905-35	TRANSIS
Q426	8-729-905-35	TRANSIS
Q427	8-729-905-35	TRANSIS
Q428	8-729-905-XX	TRANSIS
Q429	8-729-905-35	TRANSIS
Q430	8-729-905-18	TRANSIS
Q431	8-729-905-23	TRANSIS

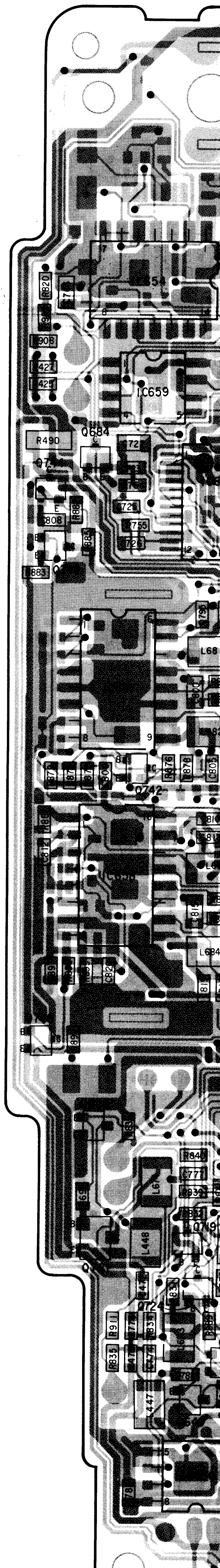
VA-62 (Y/CHROMA SIGNAL PROCESS, AUDIO SIGNAL PROCESS) PRINTED WIRING BOARD

—Ref. No. VA-62 BOARD : 1000 series—

VA-62 BOARD (COMPONENT SIDE)



VA-62 BOARD (CON



D662	8-719-951-22	DIODE	IMN10
D663	8-719-941-86	DIODE	DAN202U
D664	8-719-941-86	DIODE	DAN202U
D667	8-719-941-86	DIODE	DAN202U
D669	8-719-977-22	DIODE	DTZ9.1
D670	8-719-977-22	DIODE	DTZ9.1
D671	8-719-977-22	DIODE	DTZ9.1
D672	8-719-977-22	DIODE	DTZ9.1
D673	8-719-800-76	DIODE	1SS226
D674	8-719-977-22	DIODE	DTZ9.1
D675	8-719-977-22	DIODE	DTZ9.1
D676	8-719-977-22	DIODE	DTZ9.1
D677	8-719-977-22	DIODE	DTZ9.1
D678	8-719-977-22	DIODE	DTZ9.1
D679	8-719-977-22	DIODE	DTZ9.1
D680	8-719-977-22	DIODE	DTZ9.1
D681	8-719-977-22	DIODE	DTZ9.1
D690	8-719-941-86	DIODE	DAN202U

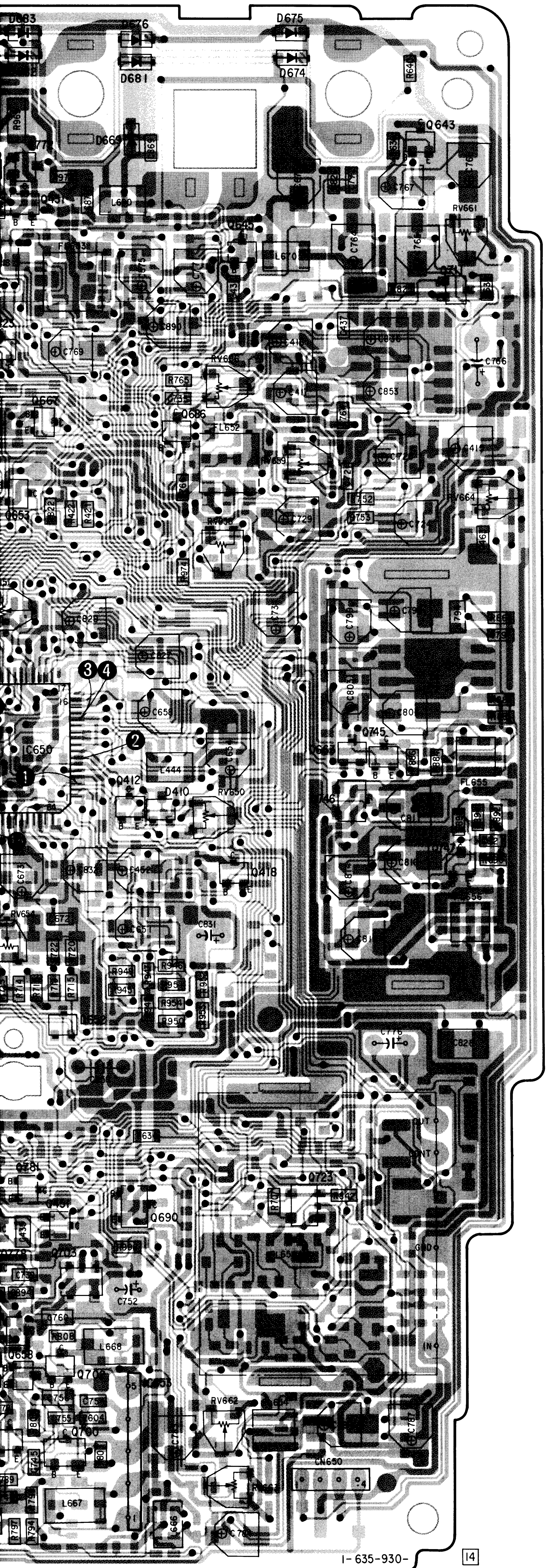
IC

IC416	8-759-710-09	IC	NJM2233AM
IC551	8-759-009-07	IC	MC14053BF
IC553	8-759-998-98	IC	LM358D
IC554	8-759-932-54	IC	MC14066BF
IC555	8-759-701-02	IC	NJM2073M
IC650	8-752-036-19	IC	CXA1207R
IC651	8-752-036-20	IC	CXA1208R
IC652	8-759-605-61	IC	CXA1203N
IC653	8-759-925-60	IC	BA401
IC654	8-752-009-51	IC	CX20095A
IC656	8-759-320-76	IC	HA118070FP
IC657	8-752-333-24	IC	CXL1506M
IC658	8-752-333-24	IC	CXL1506M
IC659	8-759-710-29	IC	NJM2235M
IC660	8-759-710-07	IC	NJM2234M
IC661	8-759-710-07	IC	NJM2234M
IC662	8-759-009-22	IC	MC14094BF
IC663	8-759-710-29	IC	NJM2235M

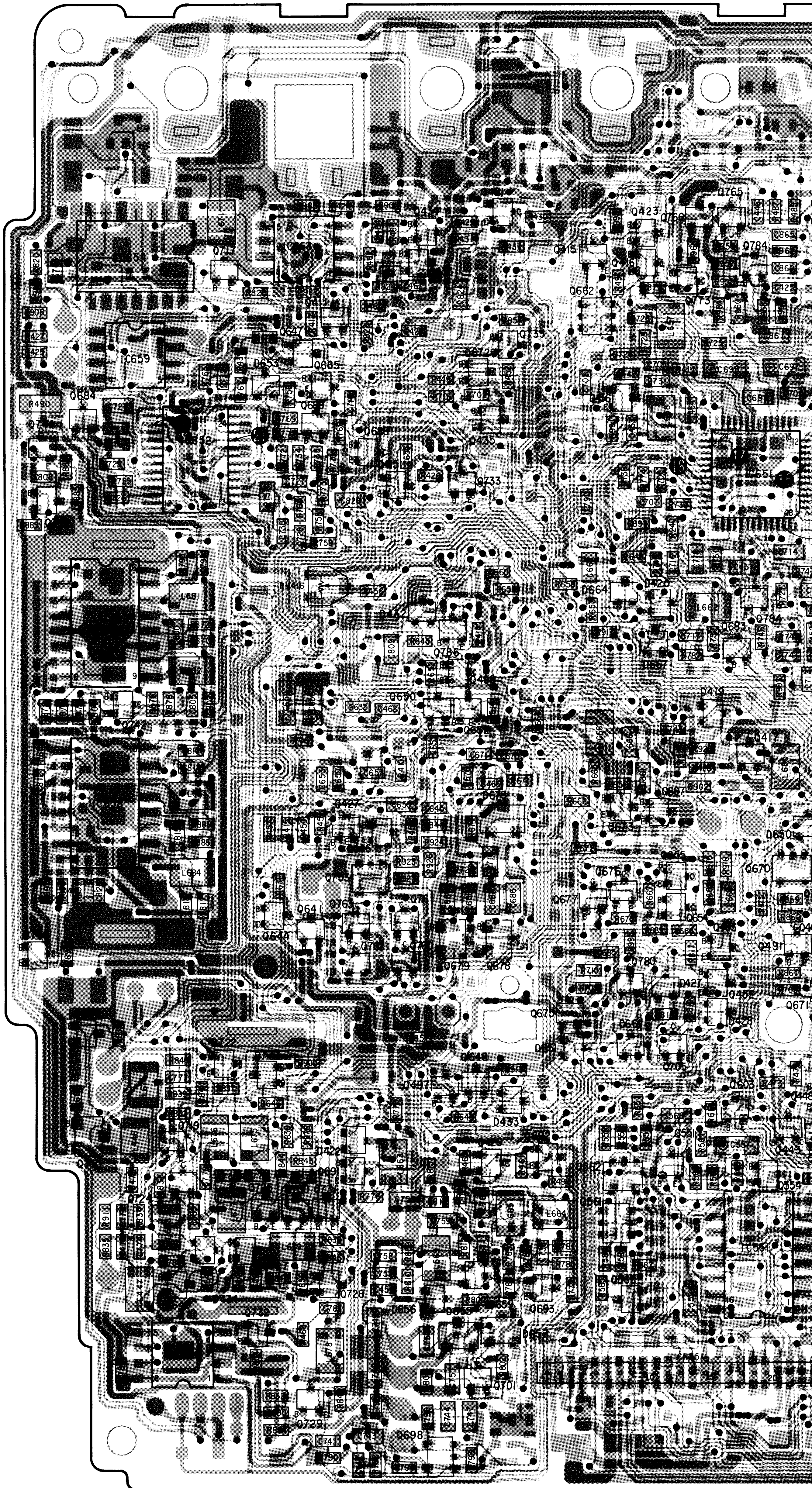
TRANSISTOR

Q411	8-729-905-23	TRANSISTOR	2SA1576-R
Q415	8-729-905-23	TRANSISTOR	2SA1576-R
Q416	8-729-905-35	TRANSISTOR	2SC4081-R
Q417	8-729-905-12	TRANSISTOR	DTA144EU
Q418	8-729-905-35	TRANSISTOR	2SC4081-R
Q421	8-729-905-23	TRANSISTOR	2SA1576-R
Q422	8-729-905-18	TRANSISTOR	DTC144EU
Q423	8-729-905-35	TRANSISTOR	2SC4081-R
Q426	8-729-905-35	TRANSISTOR	2SC4081-R
Q427	8-729-905-35	TRANSISTOR	2SC4081-R
Q428	8-729-905-XX	TRANSISTOR	DTC114TU
Q429	8-729-905-35	TRANSISTOR	2SC4081-R
Q430	8-729-905-18	TRANSISTOR	DTC144EU
Q431	8-729-905-23	TRANSISTOR	2SA1576-R
Q432	8-729-905-23	TRANSISTOR	2SA1576-R
Q433	8-729-905-35	TRANSISTOR	2SC4081-R
Q434	8-729-905-23	TRANSISTOR	2SA1576-R
Q439	8-729-905-12	TRANSISTOR	DTA144EU
Q440	8-729-905-35	TRANSISTOR	2SC4081-R
Q442	8-729-905-18	TRANSISTOR	DTC144EU
Q443	8-729-905-18	TRANSISTOR	DTC144EU
Q444	8-729-905-35	TRANSISTOR	2SC4081-R
Q446	8-729-905-35	TRANSISTOR	2SC4081-R
Q447	8-729-905-12	TRANSISTOR	DTA144EU
Q448	8-729-905-18	TRANSISTOR	DTC144EU
Q452	8-729-905-18	TRANSISTOR	DTC144EU
Q456	8-729-905-18	TRANSISTOR	DTC144EU
Q469	8-729-905-18	TRANSISTOR	DTC144EU
Q490	8-729-905-35	TRANSISTOR	2SC4081-R
Q491	8-729-905-12	TRANSISTOR	DTA144EU
Q493	8-729-905-12	TRANSISTOR	DTA144EU
Q494	8-729-905-35	TRANSISTOR	2SC4081-R
Q496	8-729-905-35	TRANSISTOR	2SC4081-R
Q497	8-729-905-18	TRANSISTOR	DTC144EU
Q498	8-729-905-18	TRA	
Q551	8-729-905-23	TRA	
Q552	8-729-905-23	TRA	
Q553	8-729-905-35	TRA	
Q554	8-729-905-35	TRA	
Q555	8-729-905-35	TRA	
Q556	8-729-905-35	TRA	
Q557	8-729-905-18	TRA	
Q558	8-729-905-12	TRA	
Q559	8-729-905-23	TRA	
Q560	8-729-905-18	TRA	
Q561	8-729-907-26	TRA	
Q562	8-729-904-07	TRA	
Q603	8-729-905-35	TRA	
Q606	8-729-902-93	TRA	
Q607	8-729-922-94	TRA	
Q608	8-729-905-23	TRA	
Q643	8-729-905-23	TRA	
Q645	8-729-905-18	TRA	
Q647	8-729-905-18	TRA	
Q648	8-729-905-12	TRA	
Q649	8-729-905-18	TRA	

IRING BOARD



VA-62 BOARD (CONDUCTOR SIDE)



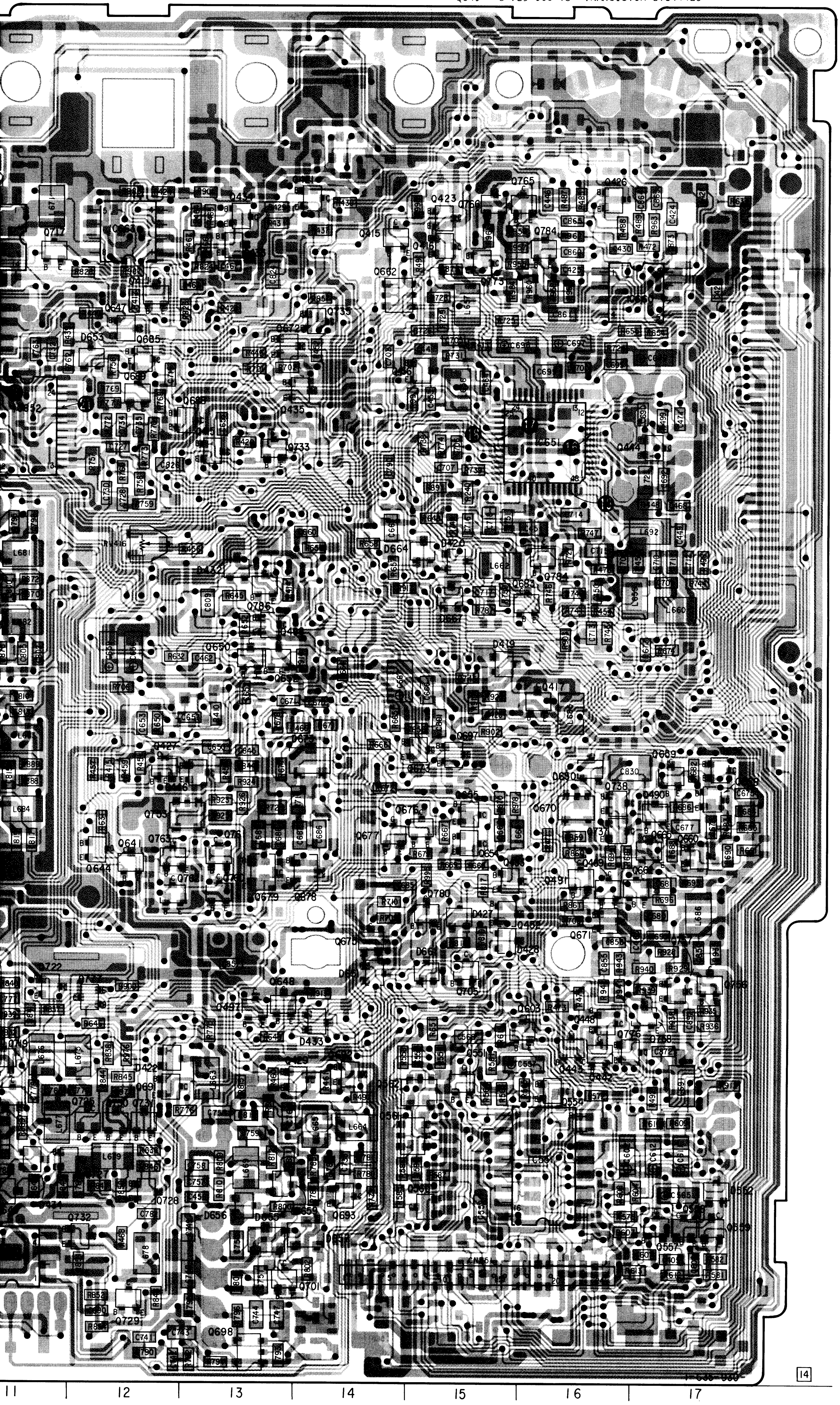
NJM2234M
MC14094BF
NJM2235M

STOR

ANSISTOR 2SA1576-R
ANSISTOR 2SA1576-R
ANSISTOR 2SC4081-R
ANSISTOR DTA144EU
ANSISTOR 2SC4081-R
ANSISTOR 2SA1576-R
ANSISTOR DTC144EU
ANSISTOR 2SC4081-R
ANSISTOR 2SC4081-R
ANSISTOR 2SC4081-R
ANSISTOR DTC114TU
ANSISTOR 2SC4081-R
ANSISTOR DTC144EU
ANSISTOR 2SA1576-R

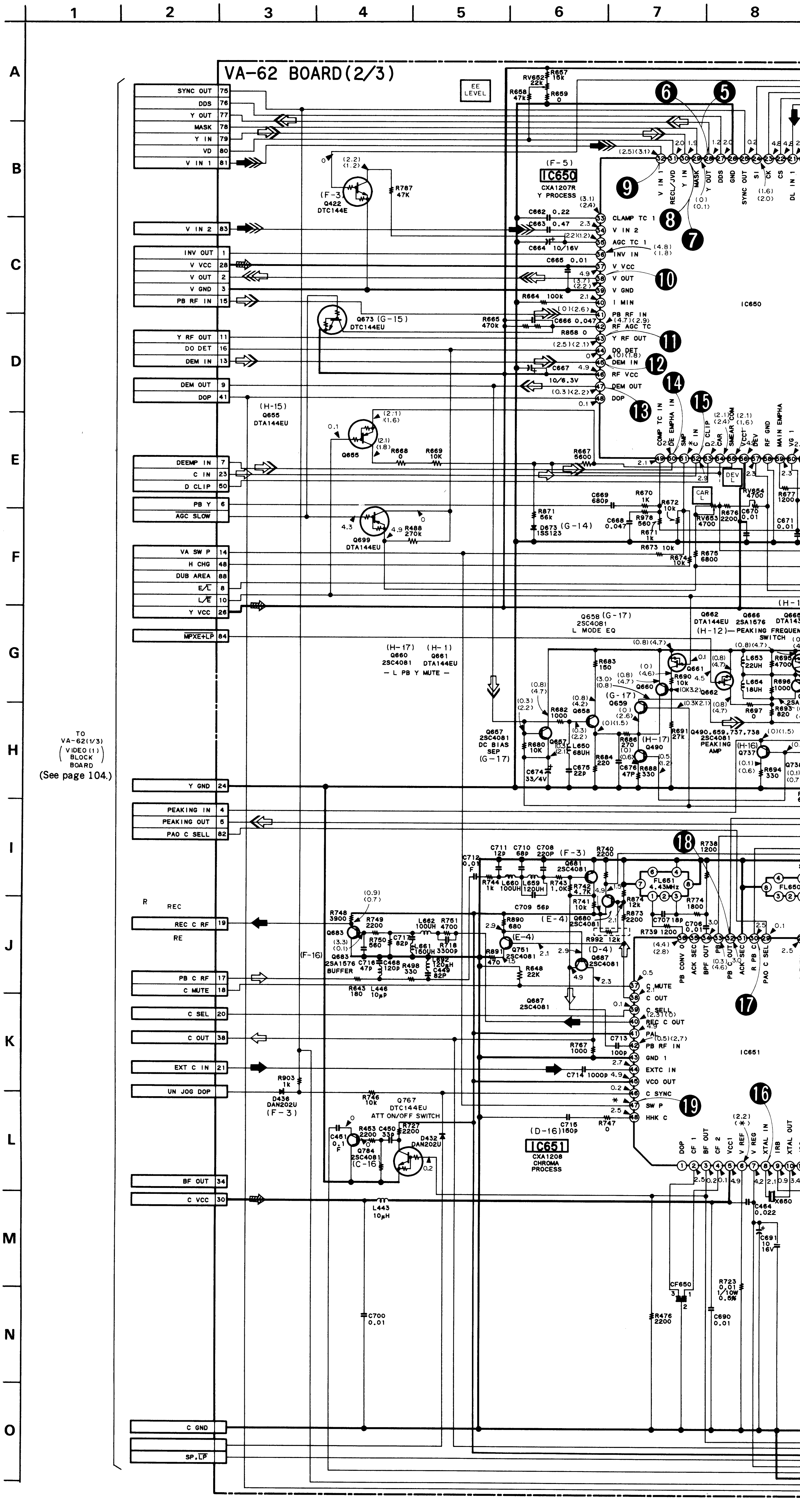
Q432	8-729-905-23	TRANSISTOR	2SA1576-R
Q433	8-729-905-35	TRANSISTOR	2SC4081-R
Q434	8-729-905-23	TRANSISTOR	2SA1576-R
Q439	8-729-905-12	TRANSISTOR	DTA144EU
Q440	8-729-905-35	TRANSISTOR	2SC4081-R
Q442	8-729-905-18	TRANSISTOR	DTC144EU
Q443	8-729-905-18	TRANSISTOR	DTC144EU
Q444	8-729-905-35	TRANSISTOR	2SC4081-R
Q446	8-729-905-35	TRANSISTOR	2SC4081-R
Q447	8-729-905-12	TRANSISTOR	DTA144EU
Q448	8-729-905-18	TRANSISTOR	DTC144EU
Q452	8-729-905-18	TRANSISTOR	DTC144EU
Q456	8-729-905-18	TRANSISTOR	DTC144EU
Q469	8-729-905-18	TRANSISTOR	DTC144EU
Q490	8-729-905-35	TRANSISTOR	2SC4081-R
Q491	8-729-905-12	TRANSISTOR	DTA144EU
Q493	8-729-905-12	TRANSISTOR	DTA144EU
Q494	8-729-905-35	TRANSISTOR	2SC4081-R
Q496	8-729-905-35	TRANSISTOR	2SC4081-R
Q497	8-729-905-18	TRANSISTOR	DTC144EU
Q498	8-729-905-18	TRANSISTOR	DTC144EU
Q551	8-729-905-23	TRANSISTOR	2SA1576-R
Q552	8-729-905-23	TRANSISTOR	2SA1576-R
Q553	8-729-905-35	TRANSISTOR	2SC4081-R
Q554	8-729-905-35	TRANSISTOR	2SC4081-R
Q555	8-729-905-35	TRANSISTOR	2SC4081-R
Q556	8-729-905-35	TRANSISTOR	2SC4081-R
Q557	8-729-905-18	TRANSISTOR	DTC144EU
Q558	8-729-905-12	TRANSISTOR	DTA144EU
Q559	8-729-905-23	TRANSISTOR	2SA1576-R
Q560	8-729-905-18	TRANSISTOR	DTC144EU
Q561	8-729-907-26	TRANSISTOR	IMX1
Q562	8-729-904-07	TRANSISTOR	FMG2
Q603	8-729-905-35	TRANSISTOR	2SC4081-R
Q606	8-729-902-93	TRANSISTOR	FMG4
Q607	8-729-922-94	TRANSISTOR	DTC143TU
Q608	8-729-905-23	TRANSISTOR	2SA1576-R
Q643	8-729-905-23	TRANSISTOR	2SA1576-R
Q645	8-729-905-18	TRANSISTOR	DTC144EU
Q647	8-729-905-18	TRANSISTOR	DTC144EU
Q648	8-729-905-12	TRANSISTOR	DTA144EU
Q649	8-729-905-18	TRANSISTOR	DTC144EU
Q653	8-729-905-18	TRANSISTOR	DTC144EU
Q655	8-729-905-12	TRANSISTOR	DTA144EU
Q657	8-729-905-35	TRANSISTOR	2SC4081-R
Q658	8-729-905-35	TRANSISTOR	2SC4081-R
Q659	8-729-905-35	TRANSISTOR	2SC4081-R
Q660	8-729-905-35	TRANSISTOR	2SC4081-R
Q661	8-729-905-12	TRANSISTOR	DTA144EU
Q662	8-729-905-12	TRANSISTOR	DTA144EU
Q665	8-729-905-45	TRANSISTOR	DTA143EU
Q666	8-729-905-23	TRANSISTOR	2SA1576-R
Q667	8-729-905-18	TRANSISTOR	DTC144EU
Q668	8-729-905-35	TRANSISTOR	2SC4081-R
Q669	8-729-905-12	TRANSISTOR	DTA144EU
Q670	8-729-903-10	TRANSISTOR	FMW1
Q671	8-729-905-23	TRANSISTOR	2SA1576-R
Q672	8-729-905-18	TRANSISTOR	DTC144EU
Q673	8-729-905-12	TRANSISTOR	DTA144EU
Q674	8-729-141-48	TRANSISTOR	2SB624-BV345
Q675	8-729-905-18	TRANSISTOR	DTC144EU
Q676	8-729-905-12	TRANSISTOR	DTA144EU
Q677	8-729-905-12	TRANSISTOR	DTA144EU
Q678	8-729-202-38	TRANSISTOR	2SC3326N
Q679	8-729-202-38	TRANSISTOR	2SC3326N
Q680	8-729-905-35	TRANSISTOR	2SC4081-R
Q681	8-729-905-35	TRANSISTOR	2SC4081-R
Q683	8-729-905-23	TRANSISTOR	2SA1576-R
Q684	8-729-905-18	TRANSISTOR	DTC144EU
Q685	8-729-905-12	TRANSISTOR	DTA144EU
Q686	8-729-905-35	TRANSISTOR	2SC4081-R
Q687	8-729-905-35	TRANSISTOR	2SC4081-R
Q688	8-729-905-35	TRANSISTOR	2SC4081-R
Q689	8-729-905-35	TRANSISTOR	2SC4081-R
Q690	8-729-141-48	TRANSISTOR	2SB624-BV345
Q691	8-729-905-18	TRANSISTOR	DTC144EU
Q692	8-729-905-18	TRANSISTOR	DTC144EU
Q693	8-729-905-35	TRANSISTOR	2SC4081-R
Q694	8-729-905-35	TRANSISTOR	2SC4081-R
Q695	8-729-905-12	TRANSISTOR	DTA144EU
Q696	8-729-905-18	TRANSISTOR	DTC144EU
Q697	8-729-905-12	TRANSISTOR	DTA144EU
Q698	8-729-903-10	TRANSISTOR	FMW1
Q700	8-729-202-38	TRANSISTOR	2SC3326N
Q701	8-729-905-35	TRANSISTOR	2SC4081-R
Q702	8-729-905-35	TRANSISTOR	2SC4081-R
Q703	8-729-903-10	TRANSISTOR	FMW1
Q705	8-729-905-12	TRANSISTOR	DTA144EU
Q707	8-729-904-20	TRANSISTOR	FMA2
Q708	8-729-904-07	TRANSISTOR	FMG2
Q711	8-729-905-12	TRANSISTOR	DTA144EU
Q712	8-729-905-12	TRANSISTOR	DTA144EU
Q717	8-729-905-23	TRANSISTOR	2SA1576-R
Q719	8-729-905-18	TRANSISTOR	DTC144EU
Q721	8-729-202-38	TRANSISTOR	2SC3326N
Q722	8-729-905-35	TRANSISTOR	2SC4081-R
Q723	8-729-904-07	TRANSISTOR	FMG2
Q724	8-729-905-23	TRANSISTOR	2SA1576-R
Q725	8-729-905-23	TRANSISTOR	2SA1576-R
Q727	8-729-905-45	TRANSISTOR	DTA143EU
Q728	8-729-905-23	TRANSISTOR	2SA1576-R
Q729	8-729-905-35	TRANSISTOR	2SC4081-R
Q730	8-729-905-23	TRANSISTOR	2SA1576-R
Q731	8-729-905-12	TRANSISTOR	DTA144EU
Q732	8-729-905-35	TRANSISTOR	2SC4081-R
Q733	8-729-905-18	TRANSISTOR	DTC144EU
Q734	8-729-905-18	TRANSISTOR	DTC144EU
Q735	8-729-905-35	TRANSISTOR	2SC4081-R
Q736	8-729-905-45	TRANSISTOR	DTA143EU
Q737	8-729-905-35	TRANSISTOR	2SC4081-R
Q738	8-729-905-35	TRANSISTOR	2SC4081-R
Q742	8-729-905-23	TRANSISTOR	2SA1576-R
Q743	8-729-905-35	TRANSISTOR	2SC4081-R
Q744	8-729-905-35	TRANSISTOR	2SC4081-R
Q745	8-729-905-18	TRANSISTOR	DTC144EU
Q746	8-729-141-48	TRANSISTOR	2SB624-BV345
Q747	8-729-905-23	TRANSISTOR	2SA1576-R
Q748	8-729-905-35	TRANSISTOR	2SC4081-R
Q751	8-729-905-35	TRANSISTOR	2SC4081-R
Q752	8-729-905-23	TRANSISTOR	2SA1576-R
Q753	8-729-904-20	TRANSISTOR	FMA2
Q756	8-729-905-18	TRANSISTOR	DTC144EU
Q757	8-729-905-35	TRANSISTOR	2SC4081-R
Q758	8-729-905-23	TRANSISTOR	2SA1576-R
Q759	8-729-905-35	TRANSISTOR	2SC4081-R
Q760	8-729-905-12	TRANSISTOR	DTA144EU
Q761	8-729-905-18	TRANSISTOR	DTC144EU
Q762	8-729-905-18	TRANSISTOR	DTC144EU
Q763	8-729-905-18	TRANSISTOR	DTC144EU
Q764	8-729-905-35	TRANSISTOR	2SC4081-R
Q765	8-729-905-35	TRANSISTOR	2SC4081-R
Q766	8-729-905-23	TRANSISTOR	2SA1576-R
Q770	8-729-101-07	TRANSISTOR	2SB798-DL
Q772	8-729-905-12	TRANSISTOR	DTA144EU
Q773	8-729-905-12	TRANSISTOR	DTA144EU
Q774	8-729-905-35	TRANSISTOR	2SC4081-R
Q775	8-729-905-18	TRANSISTOR	DTC144EU
Q776	8-729-905-12	TRANSISTOR	DTA144EU
Q777	8-729-905-23	TRANSISTOR	2SA1576-R
Q784	8-729-905-35	TRANSISTOR	2SC4081-R
Q786	8-729-905-18	TRANSISTOR	DTC144EU

CONDUCTOR SIDE)



VA-62 (Y/CHROMA SIGNAL PROCESS, AUDIO SIGNAL PROCESS) SCHEMATIC DIAGRAM

—Ref. No. VA-62 BOARD : 1000 series—


1
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A
B
C
D
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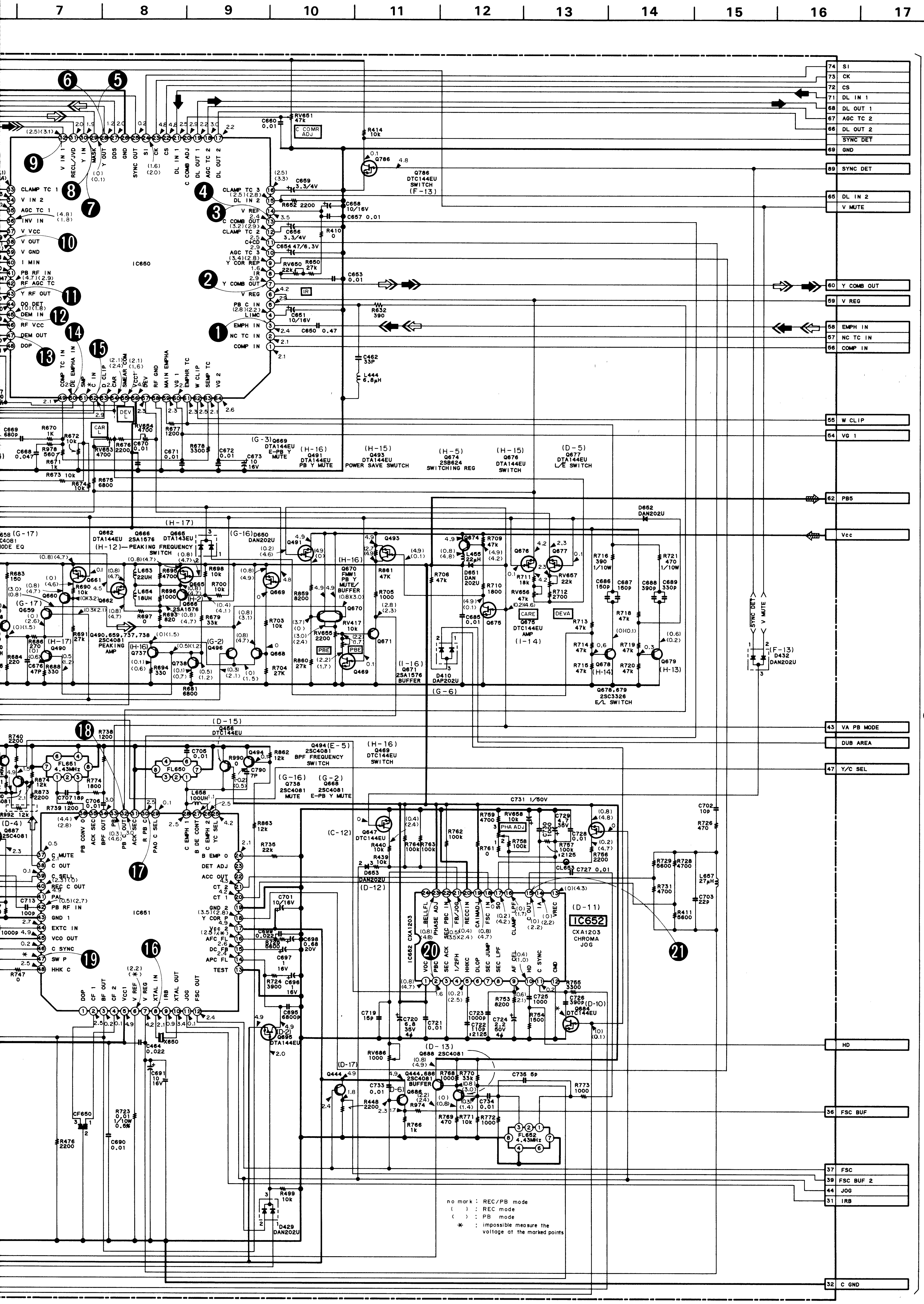
G
H
I
J
K
L
M
N
O
VA-62 BOARD(2/3)
EE LEVEL
SYNC OUT 75
DDS 76
Y OUT 77
MASK 78
Y IN 79
VD 80
V IN 1 81
V IN 2 83
INV OUT 1
V VCC 28
V OUT 2
V GND 3
PB RF IN 15
Y RF OUT 11
DO DET 16
DEM IN 13
DEM OUT 9
DOP 41
DEEMP IN 7
C IN 23
D CLIP 50
PB Y 6
AGC SLOW
VA SW P 14
H CHG 48
DUB AREA 88
Y VCC 26
MPXE+LP 84
TO VA-62(1/3) (VIDEO(1) BLOCK BOARD)
(See page 104.)
Y GND 24
PEAKING IN 4
PEAKING OUT 5
PAO C SELL 82
REC C RF 19
PB C RF 17
C MUTE 18
C SEL 20
C OUT 38
EXT C IN 21
UN JOG DOP
BF OUT 34
C VCC 30
C GND
SP.LP
IC650 CXA1207R Y PROCESS
IC651 CXA1208 CHROMA PROCESS
Q422 DTC144E
Q673 DTC144EU
Q655 DTA144EU
Q699 DTA144EU
Q660 2SC4081 Q661 DTA144EU — L PB Y MUTE —
Q658 2SC4081 L MODE EQ
Q657 2SC4081 DC BIAS SEP
Q662 DTA144EU Q666 2SA1576 PEAKING FREQUENCY SWITCH
Q490,659,737,738 2SC4081 PEAKING AMP
Q683 2SA1576 BUFFER
Q681 2SC4081
Q751 2SC4081
Q687 2SC4081
Q767 DTC144EU ATT ON/OFF SWITCH
Q784 2SC4081
D436 DAN202U
D432 DAN202U
D673 1SS123
FL651 4.43MHz
CLAMP TC 1
V IN 2
AGC TC 1
INV IN
V VCC
V OUT
V GND
I MIN
PB RF IN
RF AGC TC
Y RF OUT
DO DET
DEM IN
RF VCC
DEM OUT
DOP
C MUTE
C OUT
C SELL
REC C OUT
PAL
PB RF IN
GND 1
EXTC IN
VCO OUT
C SYNC
SW P
HHK C

- Signal path

	VIDEO Signal		
	CHROMA	Y	Y/CHROMA
REC	➡	➡➡	➡➡➡
PB	⇨	⇨⇨	⇨⇨⇨


7
8
9
10
11
12
13
14
15
16
17
18
IC650
IC651
IC652
CXA1203
CHROMA
JOG
(D-11)
74 SI
73 CK
72 CS
71 DL IN 1
68 DL OUT 1
67 AGC TC 2
66 DL OUT 2
SYNC DET
69 GND
89 SYNC DET
65 DL IN 2
V MUTE
60 Y COMB OUT
59 V REG
58 EMPH IN
57 NC TC IN
56 COMP IN
55 W CLIP
54 VG 1
62 PB5
Vcc
43 VA PB MODE
DUB AREA
47 Y/C SEL
HD
36 FSC BUF
37 FSC
39 FSC BUF 2
44 JOG
31 IRB
32 C GND
Q786 DTC144EU SWITCH (F-13)
C COMB ADJ
RV651 47k
(G-3) Q669 DTA144EU E-PB Y MUTE
(H-16) Q491 DTA144EU PB Y MUTE
(H-15) Q493 DTA144EU POWER SAVE SWITCH
(H-5) Q674 2SB624 SWITCHING REG
(H-15) Q676 DTA144EU SWITCH
(D-5) Q677 DTA144EU L/E SWITCH
Q662 DTA144EU
Q666 2SA1576
Q665 DTA143EU
(H-12) PEAKING FREQUENCY SWITCH
D650 DAN202U
D652 DAN202U
Q670 FMW1 PB Y MUTE/BUFFER
Q490,659,737,738 2SC4081 PEAKING AMP
Q671 2SA1576 BUFFER
Q675 DTC144EU AMP (I-14)
D410 DAP202U
Q678,679 2SC3326 E/L SWITCH
D432 DAN202U
CARE
DEVA
PBE
DEV L
CAR L
(D-15) Q456 DTC144EU
Q494 (E-5) 2SC4081 BPF FREQUENCY SWITCH
(H-16) Q469 DTC144EU SWITCH
(G-16) Q738 2SC4081 MUTE
(G-2) Q668 2SC4081 E-PB Y MUTE
FL651 4.43MHz
FL650
FL652 4.43MHz
Q647 DTC144EU
D653 DAN202U
Q684 DTC144EU (D-10)
Q695 DTA144EU (D-2)
(D-13) Q688 2SC4081
Q444,686 2SC4081 BUFFER
D429 DAN202U
CF650
X650
PHA ADJ
C731 1/50V
1
2
3
4
5
6
7
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9
10
11
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16
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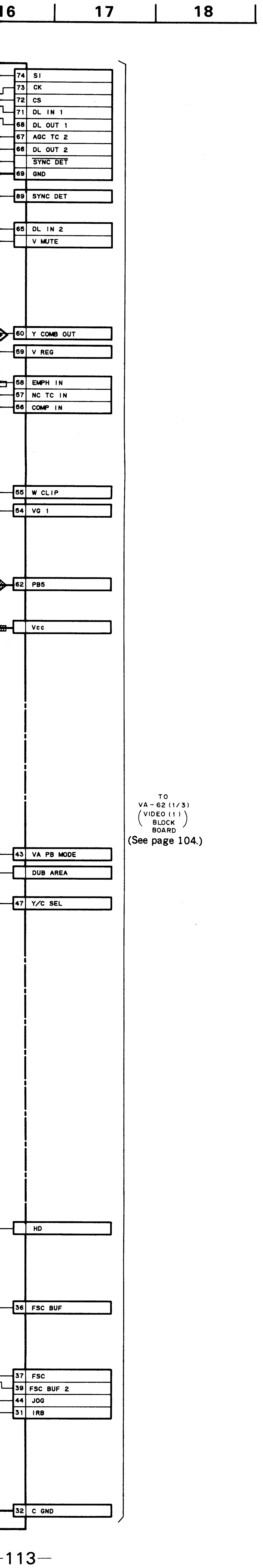
19
20
21

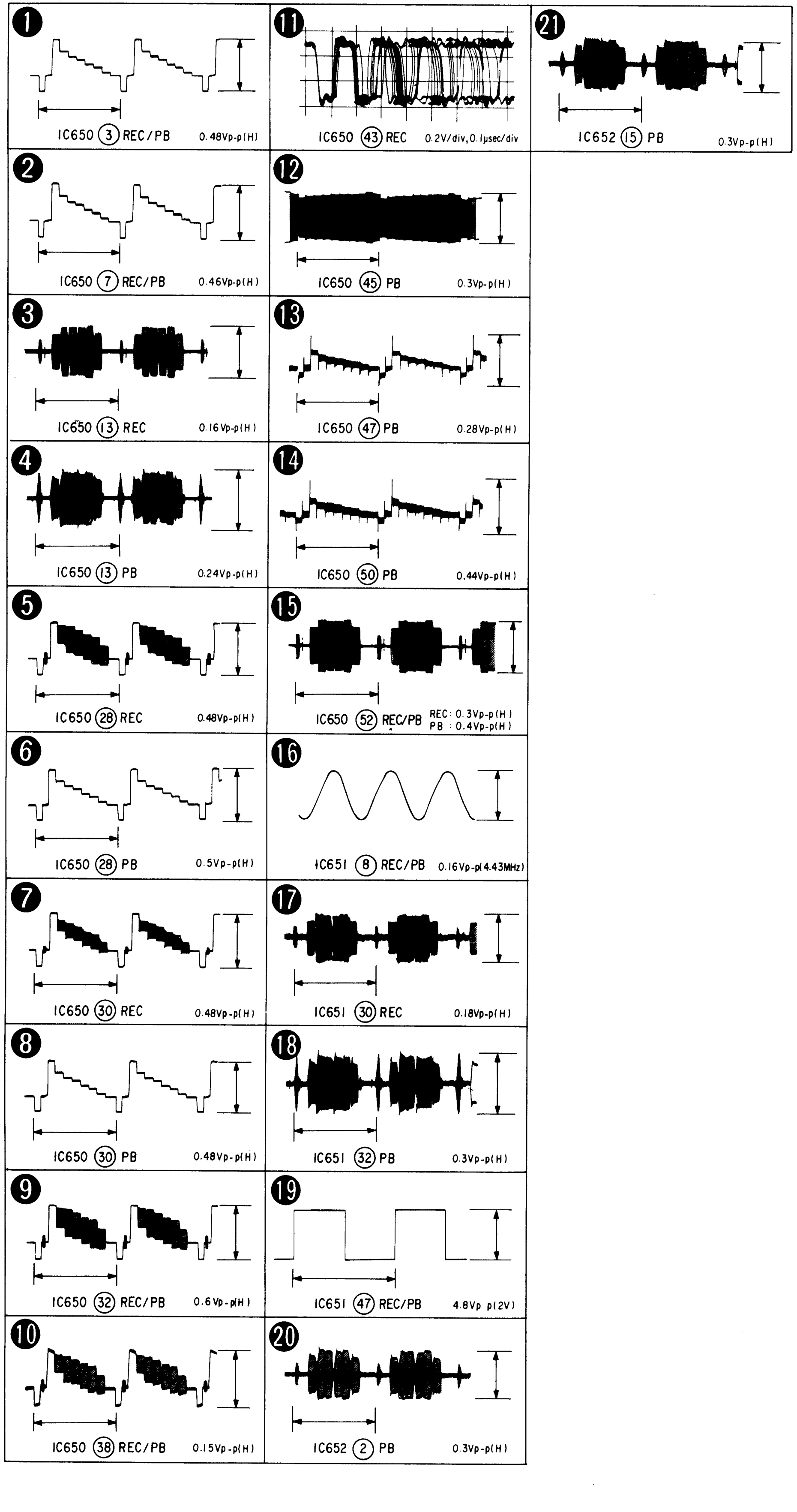
no mark : REC/PB mode
( ) : REC mode
( ) : PB mode
✱ : impossible measure the voltage at the marked points

TO
VA-62 (1/3)
(VIDEO (1) BLOCK BOARD)
(See page 104.)


16
17
18
74 SI
73 CK
72 CS
71 DL IN 1
68 DL OUT 1
67 AGC TC 2
66 DL OUT 2
SYNC DET
69 GND
89 SYNC DET
65 DL IN 2
V MUTE
60 Y COMB OUT
59 V REG
58 EMPH IN
57 NC TC IN
56 COMP IN
55 W CLIP
54 VG 1
62 PB5
Vcc
43 VA PB MODE
DUB AREA
47 Y/C SEL
HD
36 FSC BUF
37 FSC
39 FSC BUF 2
44 JOG
31 IRB
32 C GND

TO
VA-62 (1/3)
(VIDEO (1) BLOCK BOARD)
(See page 104.)

VA-62 BOARD



❶ IC650 ③ REC/PB 0.48Vp-p(H)

❷ IC650 ⑦ REC/PB 0.46Vp-p(H)

❸ IC650 ⑬ REC 0.16Vp-p(H)

❹ IC650 ⑬ PB 0.24Vp-p(H)

❺ IC650 ㉘ REC 0.48Vp-p(H)

❻ IC650 ㉘ PB 0.5Vp-p(H)

❼ IC650 ㉚ REC 0.48Vp-p(H)

❽ IC650 ㉚ PB 0.48Vp-p(H)

❾ IC650 ㉜ REC/PB 0.6Vp-p(H)

❿ IC650 ㊳ REC/PB 0.15Vp-p(H)

⓫ IC650 ㊸ REC 0.2V/div, 0.1μsec/div

⓬ IC650 ㊺ PB 0.3Vp-p(H)

⓭ IC650 ㊼ PB 0.28Vp-p(H)

⓮ IC650 ㊿ PB 0.44Vp-p(H)

⓯ IC650 (52) REC/PB REC: 0.3Vp-p(H) PB: 0.4Vp-p(H)

⓰ IC651 ⑧ REC/PB 0.16Vp-p(4.43MHz)

⓱ IC651 ㉚ REC 0.18Vp-p(H)

⓲ IC651 ㉜ PB 0.3Vp-p(H)

⓳ IC651 ㊼ REC/PB 4.8Vp-p(2V)

⓴ IC652 ② PB 0.3Vp-p(H)

㉑ IC652 ⑮ PB 0.3Vp-p(H)

• Signal path

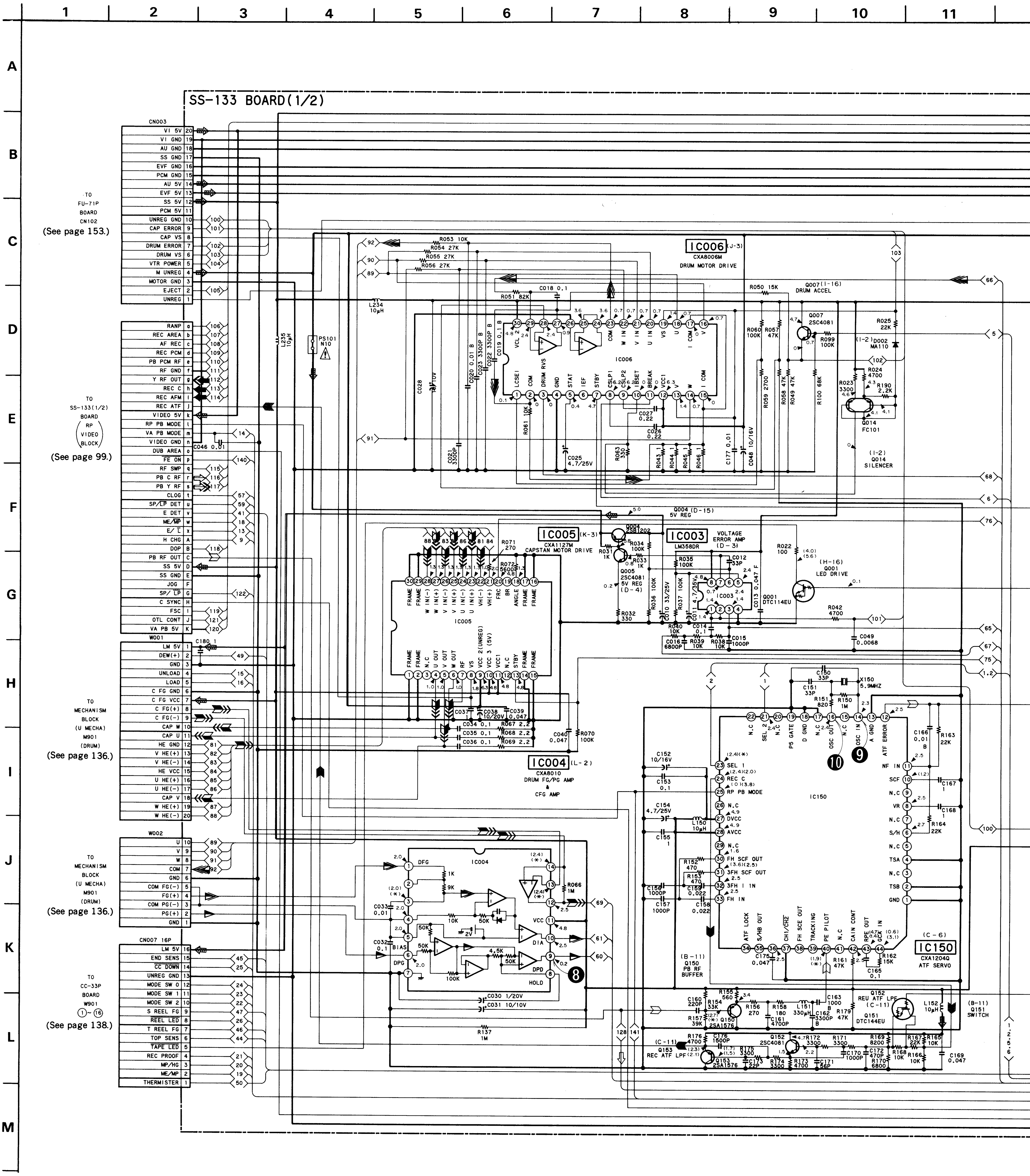
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡〉	➡〉〉	➡
PB	⇨	⇨〉	⇨〉〉	⇨

• Signal path

	REC	REC/PB	P
Drum speed servo		▷	
Drum phase servo		▷〉	
Drum servo(speed and phase)		▷〉〉	
Capstan speed servo		⊳	
Capstan phase servo	➡〉	⊳〉	Σ
Capstan servo(speed and phase)		⊳〉〉	
Ref.signal	➡	⊳	Σ

SS-133 (SERVO, SYSTEM CONTROL, REC/PB AMP) SCHEMATIC DIAGRAM

—Ref. No. SS-133 BOARD : 2000 series—



1
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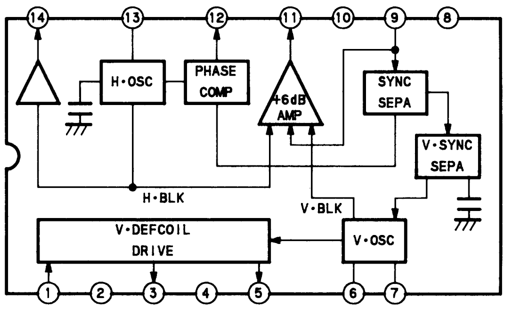
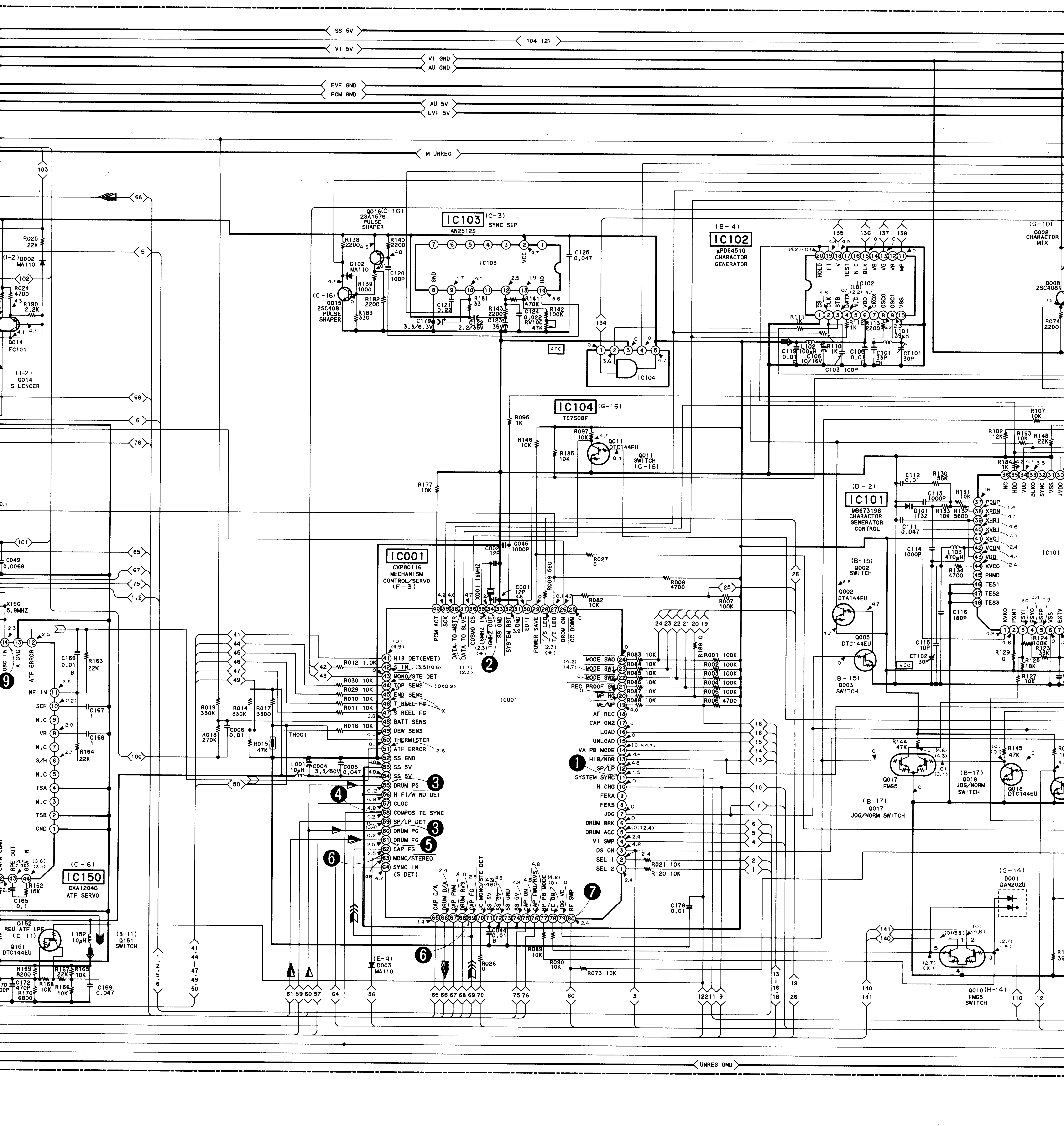
11
A
B
C
D
E
F
G
H
I
J
K
L
M
SS-133 BOARD(1/2)
CN003
TO FU-71P BOARD CN102
(See page 153.)
TO SS-133(1/2) BOARD RP VIDEO BLOCK
(See page 99.)
W001
TO MECHANISM BLOCK (U MECHA) M901 (DRUM)
(See page 136.)
W002
TO MECHANISM BLOCK (U MECHA) M901 (DRUM)
(See page 136.)
CN007 16P
TO CC-33P BOARD W901 ①~⑯
(See page 138.)
IC006
CXA8006M
DRUM MOTOR DRIVE
IC005
CXA1127M
CAPSTAN MOTOR DRIVE
IC003
LM358DR
VOLTAGE ERROR AMP
IC004
CXA8010
DRUM FG/PG AMP & CFG AMP
IC150
CXA1204Q
ATF SERVO
Q004 2SB1202 5V REG
Q005 2SC4081 5V REG
Q007 2SC4081 DRUM ACCEL
Q014 FC101 SILENCER
Q001 DTC114EU LED DRIVE
Q150 2SA1576 PB RF BUFFER
Q151 DTC144EU
Q152 2SC4081 REU ATF LPF
Q153 2SA1576 REC ATF LPF
Q151 SWITCH
X150 5.9MHZ
PS101 N10
⑧
⑨
⑩

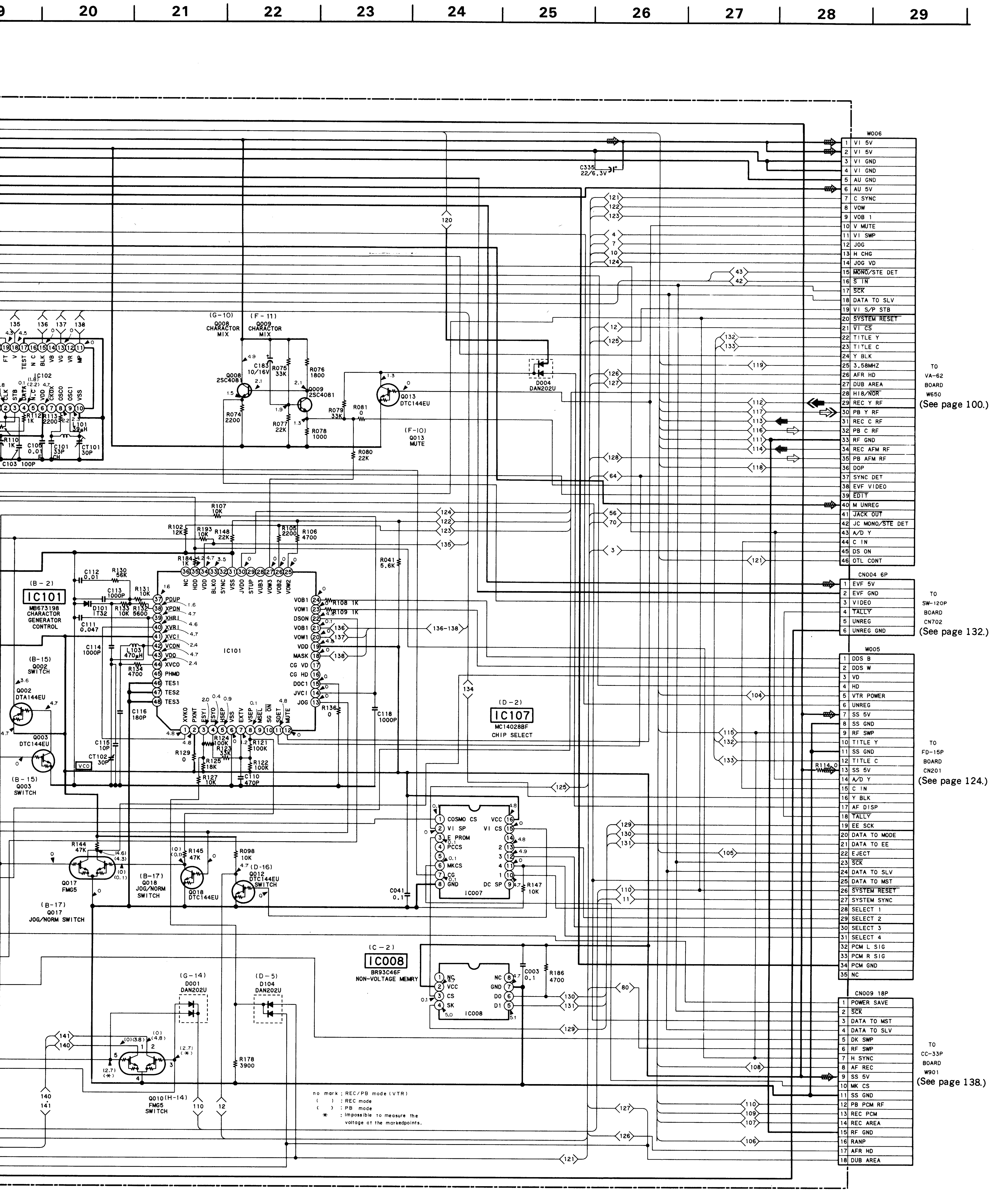
	REC	REC/PB	PB
		▻	
		▻▻	
nd phase)		▻▻▻	
o		▻	
o	▶▶	▻▻	▷▷
d and phase)		▻▻▻	
	▶	▻	▷

SS-133 BOARD IC103 AN2512S


H-OSC
PHASE COMP
+6dB AMP
SYNC SEPA
V-SYNC SEPA
H-BLK
V-BLK
V-DEFCOIL DRIVE
V-OSC

10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21

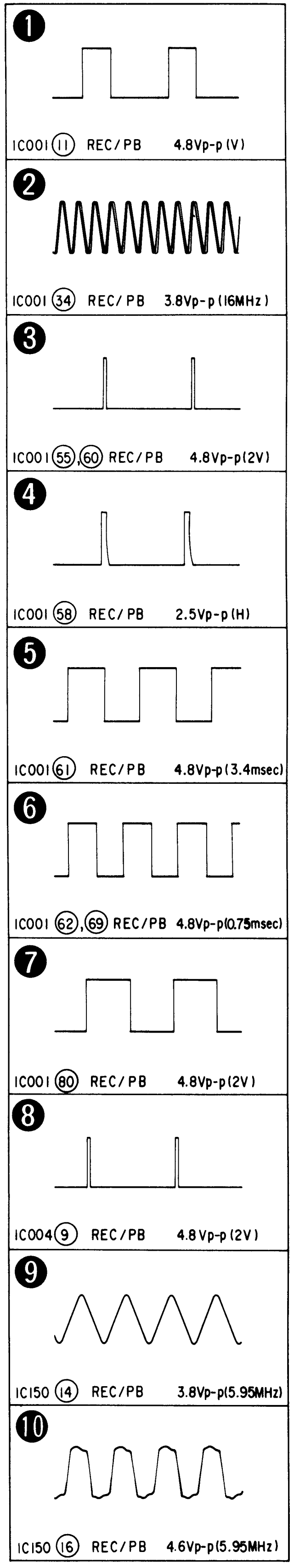

SS 5V
VI 5V
104-121
VI GND
AU GND
EVF GND
PCM GND
AU 5V
EVF 5V
M UNREG
IC103 (C-3) SYNC SEP AN2512S
Q016 (C-16) 2SA1576 PULSE SHAPER
Q015 (C-16) 2SC4081 PULSE SHAPER
IC102 (B-4) μPD6451G CHARACTOR GENERATOR
IC104 (G-16) TC7S08F
Q011 DTC144EU Q011 SWITCH (C-16)
Q008 (G-10) CHARACTOR MIX 2SC408
IC101 (B-2) MB673198 CHARACTOR GENERATOR CONTROL
IC001 CXP80116 MECHANISM CONTROL/SERVO (F-3)
Q002 (B-15) SWITCH DTA144EU
Q003 (B-15) DTC144EU SWITCH
Q017 FMG5 (B-17) Q017 JOG/NORM SWITCH
Q018 (B-17) JOG/NORM SWITCH DTC144EU
D001 (G-14) DAN202U
Q010 (H-14) FMG5 SWITCH
Q014 FC101 (I-2) Q014 SILENCER
IC150 (C-6) CXA1204Q ATF SERVO
Q151 (B-11) SWITCH
Q152 REU ATF LPF (C-11)
D003 (E-4) MA110
X150 5.9MHZ
UNREG GND



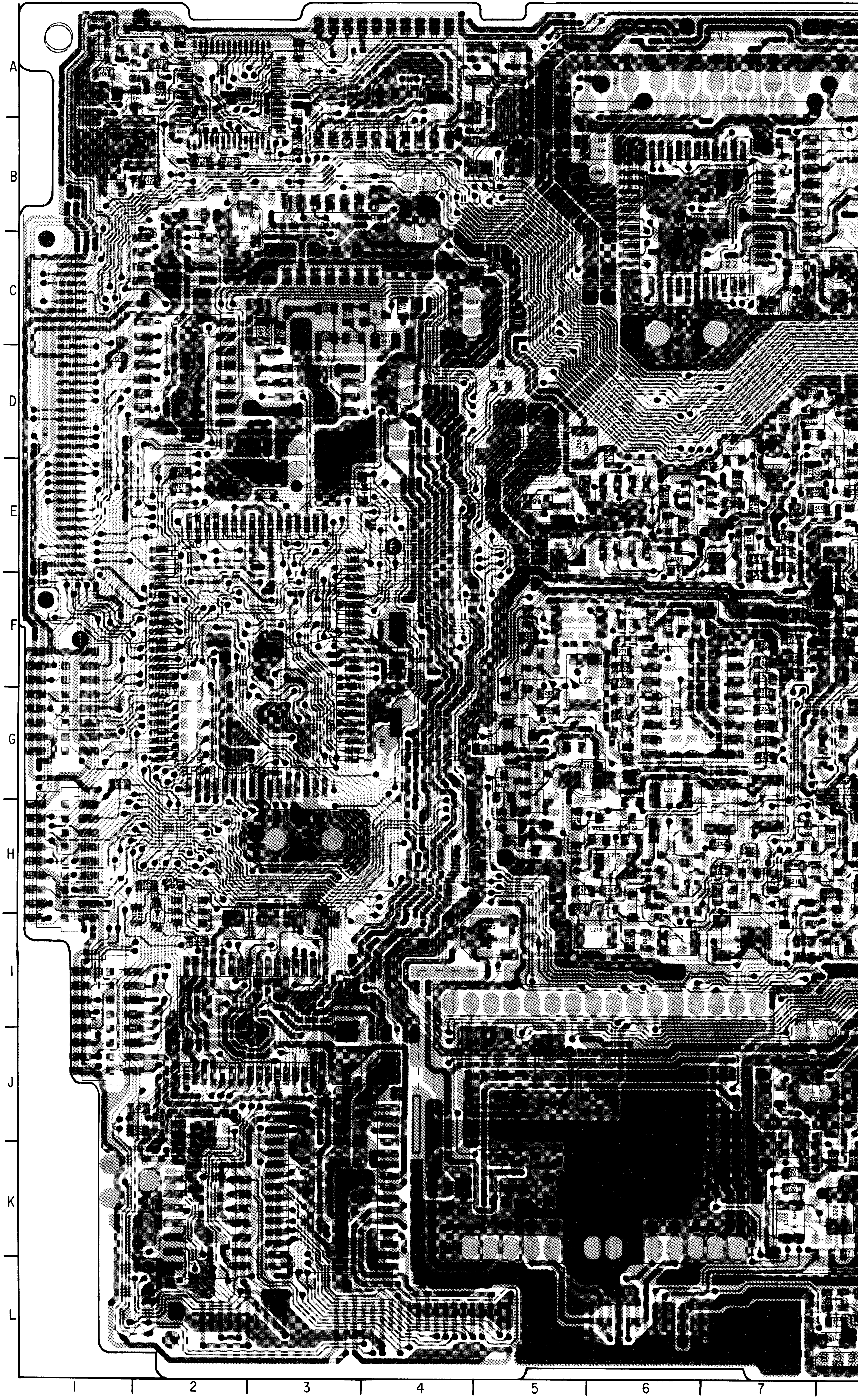
20
21
22
23
24
25
26
27
28
29
W006
1 VI 5V
2 VI 5V
3 VI GND
4 VI GND
5 AU GND
6 AU 5V
7 C SYNC
8 VOW
9 VOB 1
10 V MUTE
11 VI SWP
12 JOG
13 H CHG
14 JOG VD
15 MONO/STE DET
16 S IN
17 SCK
18 DATA TO SLV
19 VI S/P STB
20 SYSTEM RESET
21 VI CS
22 TITLE Y
23 TITLE C
24 Y BLK
25 3.58MHZ
26 AFR HD
27 DUB AREA
28 H18/NOR
29 REC Y RF
30 PB Y RF
31 REC C RF
32 PB C RF
33 RF GND
34 REC AFM RF
35 PB AFM RF
36 DOP
37 SYNC DET
38 EVF VIDEO
39 EDIT
40 M UNREG
41 JACK OUT
42 JC MONO/STE DET
43 A/D Y
44 C IN
45 DS ON
46 OTL CONT
TO VA-62 BOARD W650 (See page 100.)
CN004 6P
1 EVF 5V
2 EVF GND
3 VIDEO
4 TALLY
5 UNREG
6 UNREG GND
TO SW-120P BOARD CN702 (See page 132.)
W005
1 DDS B
2 DDS W
3 VD
4 HD
5 VTR POWER
6 UNREG
7 SS 5V
8 SS GND
9 RF SWP
10 TITLE Y
11 SS GND
12 TITLE C
13 SS 5V
14 A/D Y
15 C IN
16 Y BLK
17 AF DISP
18 TALLY
19 EE SCK
20 DATA TO MODE
21 DATA TO EE
22 EJECT
23 SCK
24 DATA TO SLV
25 DATA TO MST
26 SYSTEM RESET
27 SYSTEM SYNC
28 SELECT 1
29 SELECT 2
30 SELECT 3
31 SELECT 4
32 PCM L SIG
33 PCM R SIG
34 PCM GND
35 NC
TO FD-15P BOARD CN201 (See page 124.)
CN009 18P
1 POWER SAVE
2 SCK
3 DATA TO MST
4 DATA TO SLV
5 DK SWP
6 RF SWP
7 H SYNC
8 AF REC
9 SS 5V
10 MK CS
11 SS GND
12 PB PCM RF
13 REC PCM
14 REC AREA
15 RF GND
16 RANP
17 AFR HD
18 DUB AREA
TO CC-33P BOARD W901 (See page 138.)
(G-10) Q008 CHARACTOR MIX
(F-11) Q009 CHARACTOR MIX
Q008 2SC4081
Q009 2SC4081
Q013 DTC144EU
(F-10) Q013 MUTE
D004 DAN202U
C335 22/6.3V
(B-2) IC101 MB673198 CHARACTOR GENERATOR CONTROL
IC101
IC102
(D-2) IC107 MC14028BF CHIP SELECT
IC007
(C-2) IC008 BR93C46F NON-VOLTAGE MEMRY
IC008
(B-15) Q002 SWITCH
Q002 DTA144EU
Q003 DTC144EU
(B-15) Q003 SWITCH
Q017 FMG5
(B-17) Q017 JOG/NORM SWITCH
(B-17) Q018 JOG/NORM SWITCH
Q018 DTC144EU
Q012 DTC144EU SWITCH
(D-16)
(G-14) D001 DAN202U
(D-5) D104 DAN202U
Q010(H-14) FMG5 SWITCH
VCO
COSMO CS
VI SP
E PROM
PCCS
MKCS
CG
GND
VCC
VI CS
DC SP
NC
CS
SK
DO
DI
no mark ; REC/PB mode (VTR)
( ) : REC mode
( ) : PB mode
* : Impossible to measure the voltage of the markedpoints.

SS-133 (SERVO, SYSTEM CONTROL, REC/PB AMP) PRINTED WIRING BOARD
—Ref. No. SS-133 BOARD: 2000 series—

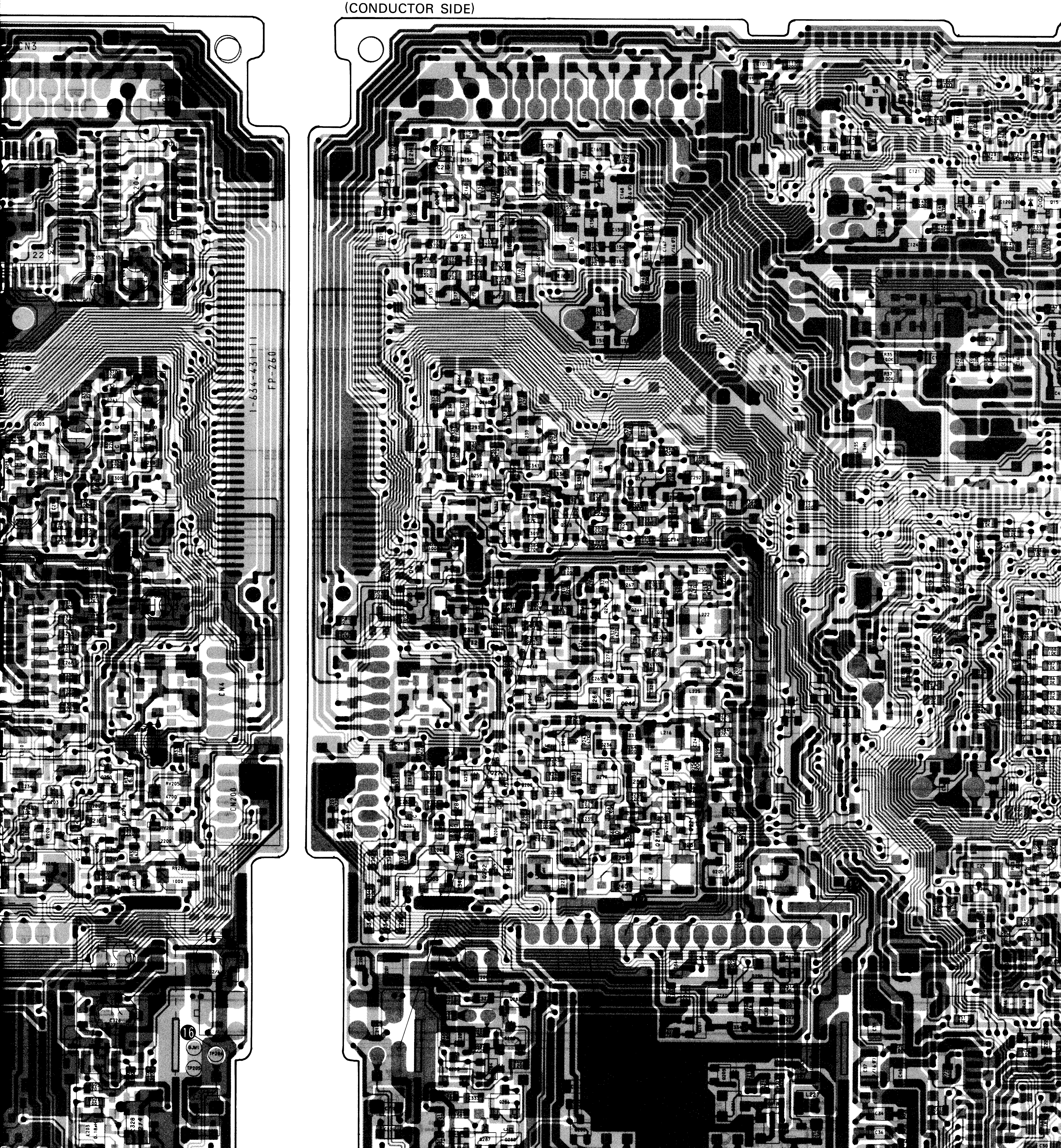
SS-133 BOARD
(SERVO, SYSTEM CONTROL)



SS-133 BOARD
(COMPONENT SIDE)


A
B
C
D
E
F
G
H
I
J
K
L
1
2
3
4
5
6
7
CN3
L234
C123
C122
PS101
D104
L221
L212
L218
L217
L203
TH1

SS-133 BOARD
(CONDUCTOR SIDE)



CN3
1-634-431-11
FP-260
CN4
CN200
TP205
16
14
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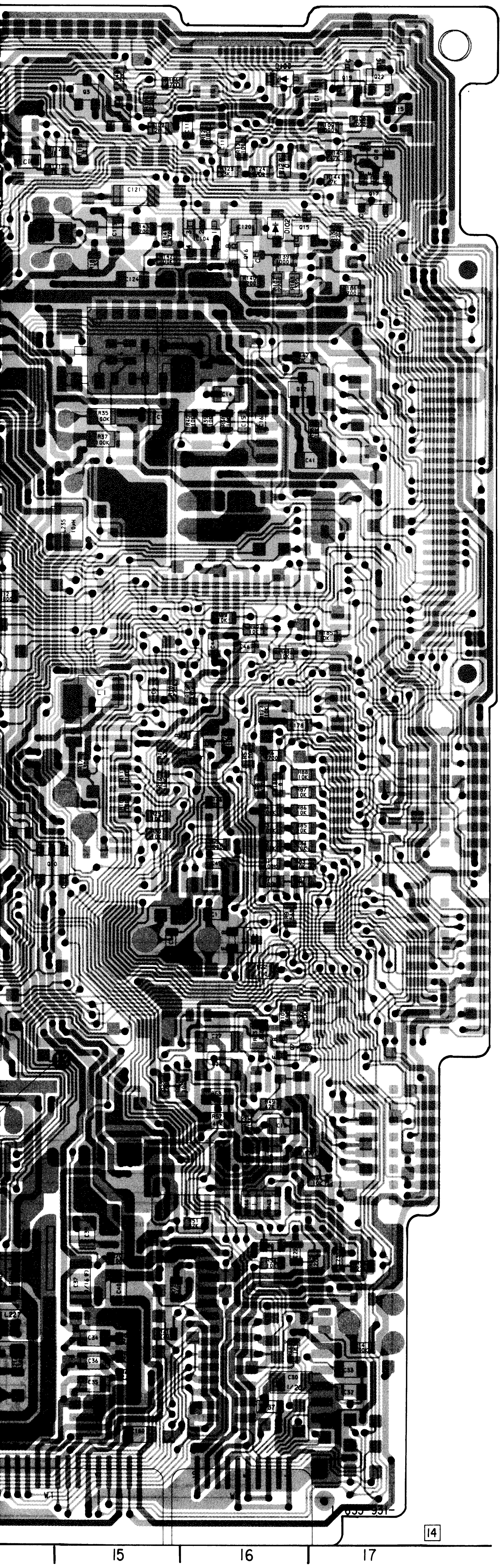
14
15
16



DIODE

D001	8-719-941-86	DIODE DAN202U
D002	8-719-404-46	DIODE MA110
D003	8-719-404-46	DIODE MA110
D004	8-719-941-86	DIODE DAN202U
D101	8-719-949-46	DIODE 1T32
D102	8-719-404-46	DIODE MA110
D104	8-719-941-86	DIODE DAN202U
D201	8-719-801-41	DIODE 1SS196
D202	8-719-941-86	DIODE DAN202U
D203	8-719-941-86	DIODE DAN202U
D205	8-719-941-86	DIODE DAN202U
D208	8-719-941-86	DIODE DAN202U
D210	8-719-941-86	DIODE DAN202U
D211	8-719-941-86	DIODE DAN202U

IC

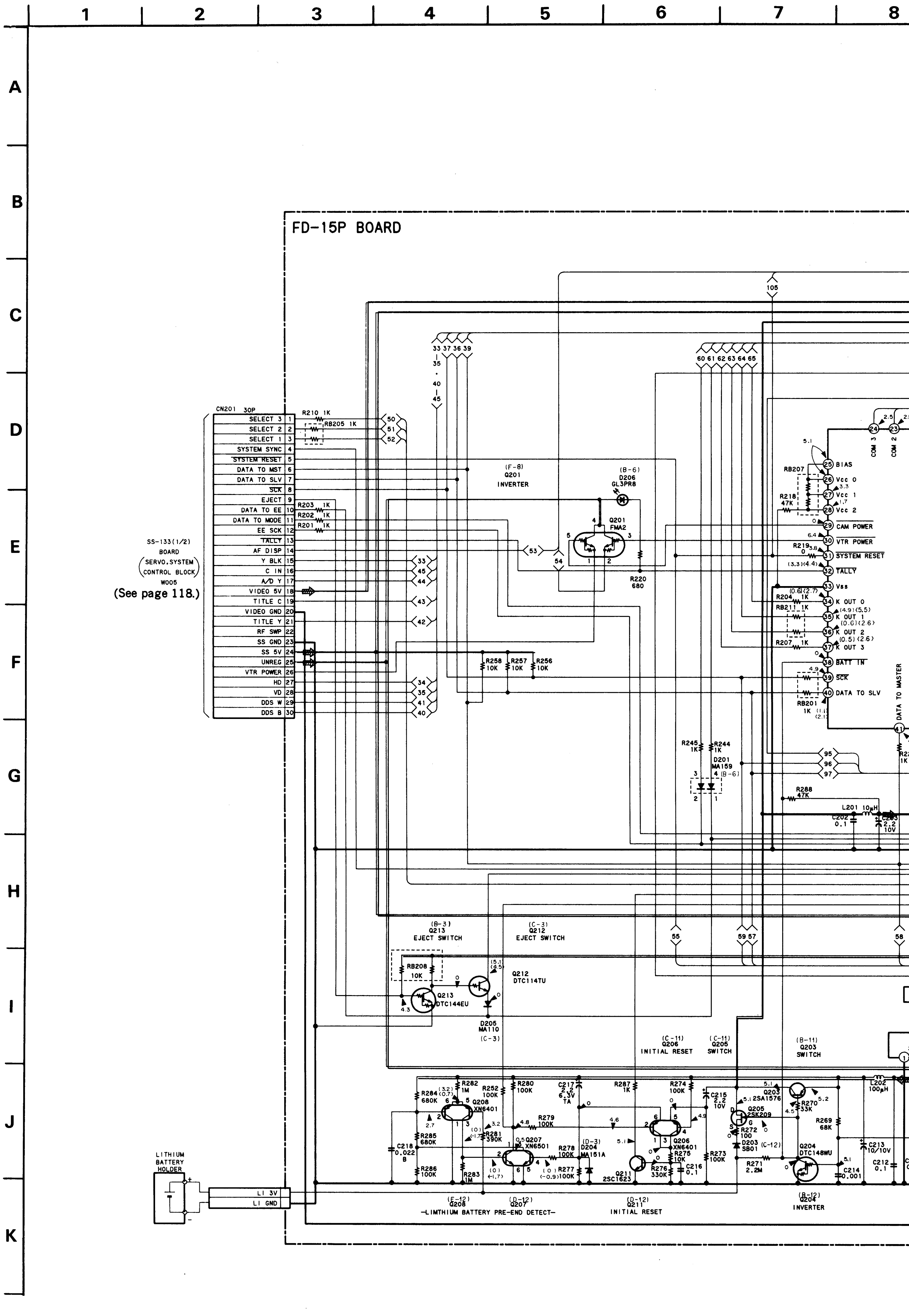
IC001	8-752-817-03	IC CXP80116-698Q
IC003	8-759-998-98	IC LM358D
IC004	8-759-148-05	IC CXA8010M
IC005	8-759-805-06	IC CXA1127M
IC006	8-759-990-55	IC CXA8006M
IC007	8-759-200-77	IC TC4028BF
IC008	8-759-748-72	IC BR93C46F
IC101	8-759-970-80	IC MB673198U
IC102	8-759-148-62	IC UPD6451G
IC103	8-759-420-01	IC AN2512S
IC104	8-759-234-20	IC TC7S08F
IC150	8-752-035-48	IC CXA1204Q
IC201	8-759-012-00	IC MC10H116M
IC202	8-759-998-92	IC LM393D
IC204	8-759-998-32	IC CXD-2107M

TRANSISTOR

Q001	8-729-907-00	TRANSISTOR DTC114EU
Q002	8-729-905-12	TRANSISTOR DTA144EU
Q003	8-729-905-18	TRANSISTOR DTC144EU
Q004	8-729-820-47	TRANSISTOR 2SB1202FAT
Q005	8-729-905-35	TRANSISTOR 2SC4081-R
Q007	8-729-905-35	TRANSISTOR 2SC4081-R
Q008	8-729-905-35	TRANSISTOR 2SC4081-R
Q009	8-729-905-35	TRANSISTOR 2SC4081-R
Q010	8-729-907-03	TRANSISTOR FMG5
Q011	8-729-905-18	TRANSISTOR DTC144EU
Q012	8-729-905-18	TRANSISTOR DTC144EU
Q013	8-729-905-18	TRANSISTOR DTC144EU
Q014	8-729-822-48	TRANSISTOR FC101
Q015	8-729-905-35	TRANSISTOR 2SC4081-R
Q016	8-729-905-23	TRANSISTOR 2SA1576-R
Q017	8-729-907-03	TRANSISTOR FMG5
Q018	8-729-905-18	TRANSISTOR DTC144EU
Q150	8-729-905-23	TRANSISTOR 2SA1576-R
Q151	8-729-905-18	TRANSISTOR DTC144EU
Q152	8-729-905-35	TRANSISTOR 2SC4081-R
Q153	8-729-905-23	TRANSISTOR 2SA1576-R
Q201	8-729-905-35	TRANSISTOR 2SC4081-R
Q202	8-729-905-35	TRANSISTOR 2SC4081-R
Q203	8-729-905-35	TRANSISTOR 2SC4081-R
Q208	8-729-216-22	TRANSISTOR 2SA1162
Q209	8-729-905-18	TRANSISTOR DTC144EU
Q213	8-729-216-22	TRANSISTOR 2SA1162
Q214	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q215	8-729-216-22	TRANSISTOR 2SA1162
Q217	8-729-102-07	TRANSISTOR 2SC2223-F13
Q218	8-729-905-35	TRANSISTOR 2SC4081-R
Q219	8-729-905-35	TRANSISTOR 2SC4081-R
Q221	8-729-905-35	TRANSISTOR 2SC4081-R
Q222	8-729-907-00	TRANSISTOR DTC114EU
Q223	8-729-905-35	TRANSISTOR 2SC4081-R
Q224	8-729-904-07	TRANSISTOR FMG2
Q225	8-729-905-45	TRANSISTOR DTA143EU
Q227	8-729-905-35	TRANSISTOR 2SC4081-R
Q229	8-729-141-48	TRANSISTOR 2SB624-BV345
Q230	8-729-141-48	TRANSISTOR 2SB624-BV345
Q231	8-729-905-18	TRANSISTOR DTC144EU
Q232	8-729-905-18	TRANSISTOR DTC144EU
Q238	8-729-117-31	TRANSISTOR 2SC4177-L5
Q239	8-729-905-18	TRANSISTOR DTC144EU
Q240	8-729-905-18	TRANSISTOR DTC144EU
Q242	8-729-117-31	TRANSISTOR 2SC4177-L5
Q243	8-729-905-18	TRANSISTOR DTC144EU
Q244	8-729-140-63	TRANSISTOR 2SA1611-M5
Q245	8-729-117-31	TRANSISTOR 2SC4177-L5
Q246	8-729-905-18	TRANSISTOR DTC144EU
Q247	8-729-905-35	TRANSISTOR 2SC4081-R
Q248	8-729-903-10	TRANSISTOR FMW1
Q249	8-729-905-18	TRANSISTOR DTC144EU
Q250	8-729-905-12	TRANSISTOR DTA144EU
Q251	8-729-905-35	TRANSISTOR 2SC4081-R
Q252	8-729-102-07	TRANSISTOR 2SC2223-F13
Q253	8-729-320-17	TRANSISTOR 2SA1122CD
Q254	8-729-905-35	TRANSISTOR 2SC4081-R
Q255	8-729-904-07	TRANSISTOR FMG2
Q256	8-729-905-12	TRANSISTOR DTA144EU
Q257	8-729-905-18	TRANSISTOR DTC144EU
Q258	8-729-903-10	TRANSISTOR FMW1
Q259	8-729-905-35	TRANSISTOR 2SC4081-R
Q260	8-729-905-35	TRANSISTOR 2SC4081-R
Q261	8-729-905-23	TRANSISTOR 2SA1576-R
Q262	8-729-905-23	TRANSISTOR 2SA1576-R
Q263	8-729-907-26	TRANSISTOR IMX1
Q265	8-729-905-35	TRANSISTOR 2SC4081-R
Q266	8-729-905-35	TRANSISTOR 2SC4081-R
Q267	8-729-905-35	TRANSISTOR 2SC4081-R
Q268	8-729-905-23	TRANSISTOR 2SA1576-R
Q269	8-729-907-26	TRANSISTOR IMX1
Q270	8-729-905-12	TRANSISTOR DTA144EU
Q272	8-729-922-94	TRANSISTOR DTC143TU
Q273	8-729-141-48	TRANSISTOR 2SB624-BV345
Q277	8-729-905-35	TRANSISTOR 2SC4081-R
Q278	8-729-905-35	TRANSISTOR 2SC4081-R
Q279	8-729-905-18	TRANSISTOR DTC144EU
Q280	8-729-905-35	TRANSISTOR 2SC4081-R
Q282	8-729-102-07	TRANSISTOR 2SC2223-F13
Q283	8-729-102-07	TRANSISTOR 2SC2223-F13
Q284	8-729-905-35	TRANSISTOR 2SC4081-R
Q285	8-729-102-07	TRANSISTOR 2SC2223-F13
Q286	8-729-105-68	TRANSISTOR 2SC3356
Q287	8-729-924-46	TRANSISTOR DTC124XU
Q288	8-729-905-12	TRANSISTOR DTA144EU
Q289	8-729-102-07	TRANSISTOR 2SC2223-F13
Q290	8-729-102-07	TRANSISTOR 2SC2223-F13
Q291	8-729-907-26	TRANSISTOR IMX1
Q292	8-729-905-12	TRANSISTOR DTA144EU
Q294	8-729-905-18	TRANSISTOR DTC144EU
Q295	8-729-905-35	TRANSISTOR 2SC4081-R

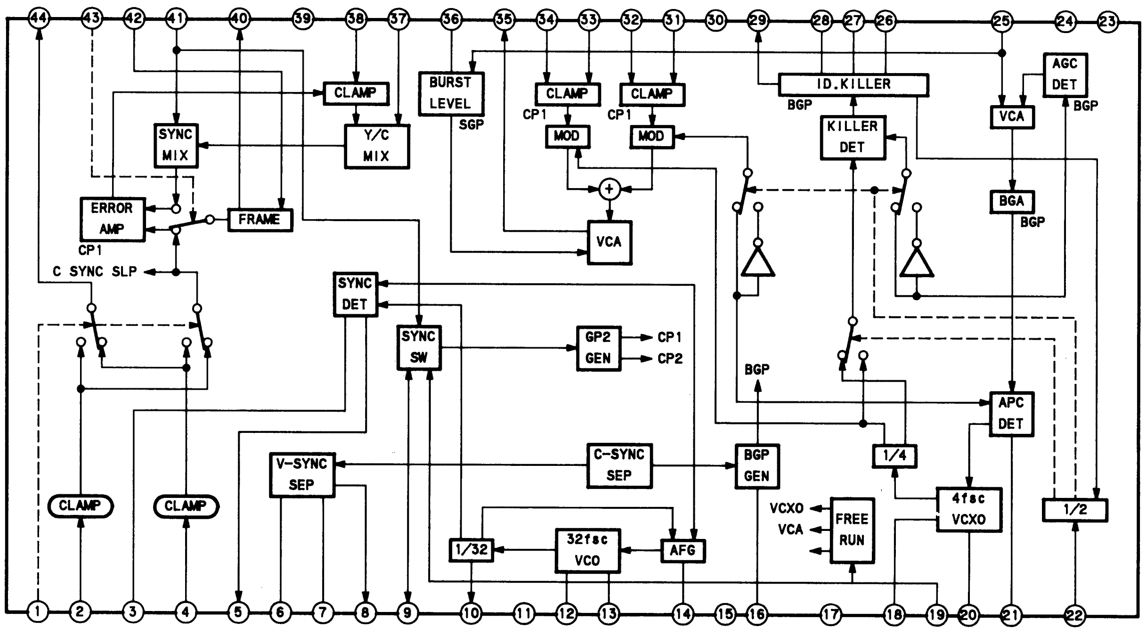
FD-15P (MODE CONTROL) SCHEMATIC DIAGRAM

—Ref. No. FD-15P BOARD: 5000 series—



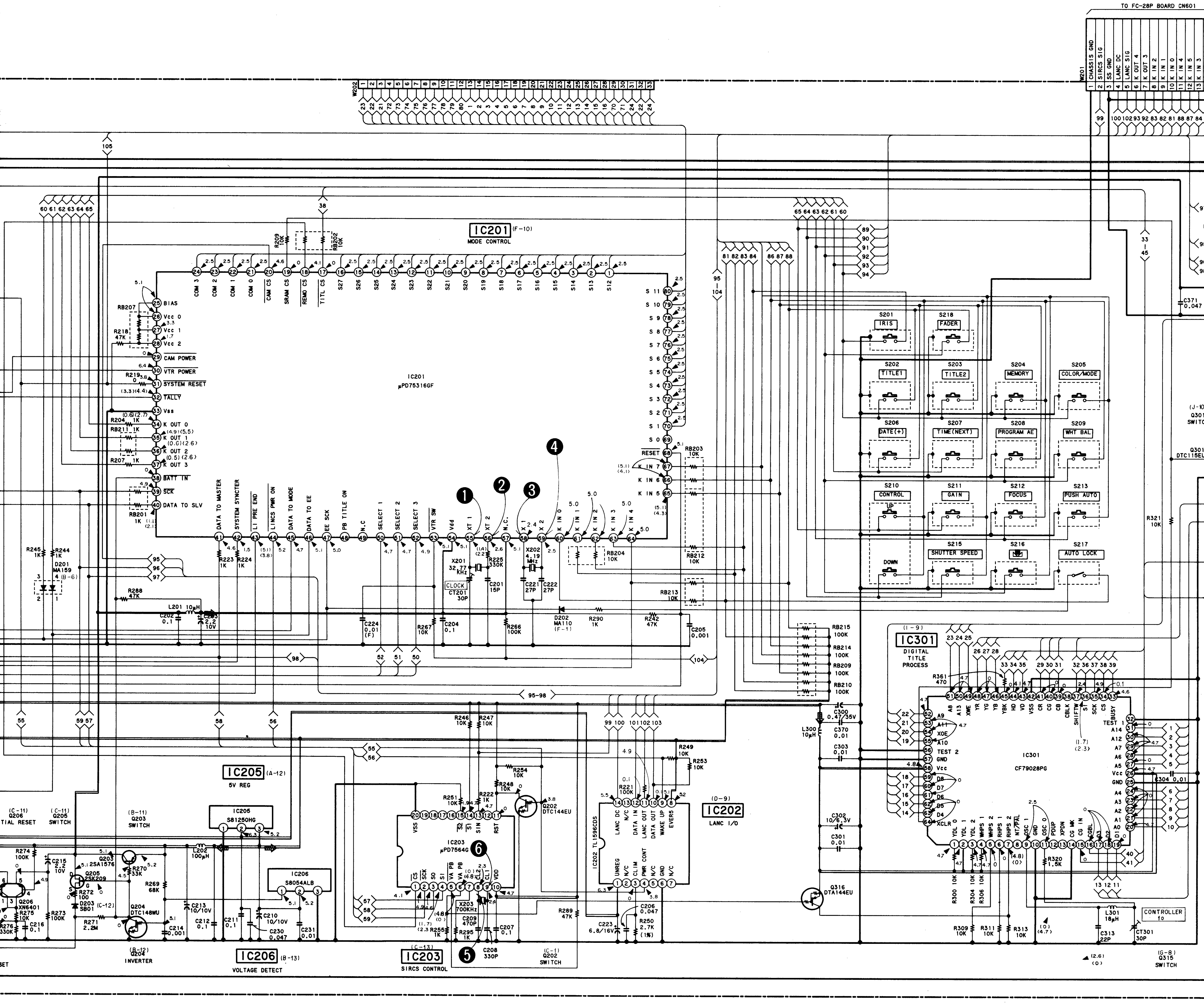
1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
K
FD-15P BOARD
CN201 30P
SELECT 3 1
SELECT 2 2
SELECT 1 3
SYSTEM SYNC 4
SYSTEM RESET 5
DATA TO MST 6
DATA TO SLV 7
SCK 8
EJECT 9
DATA TO EE 10
DATA TO MODE 11
EE SCK 12
TALLY 13
AF DISP 14
Y BLK 15
C IN 16
A/D Y 17
VIDEO 5V 18
TITLE C 19
VIDEO GND 20
TITLE Y 21
RF SWP 22
SS GND 23
SS 5V 24
UNREG 25
VTR POWER 26
HD 27
VD 28
DDS W 29
DDS B 30
SS-133(1/2) BOARD (SERVO,SYSTEM CONTROL BLOCK) W005
(See page 118.)
R210 1K
RB205 1K
R203 1K
R202 1K
R201 1K
R258 10K
R257 10K
R256 10K
(F-8) Q201 INVERTER
(B-6) D206 GL3PR8
Q201 FMA2
R220 680
BIAS
Vcc 0
Vcc 1
Vcc 2
CAM POWER
VTR POWER
SYSTEM RESET
TALLY
Vss
K OUT 0
K OUT 1
K OUT 2
K OUT 3
BATT IN
SCK
DATA TO SLV
DATA TO MASTER
COM 3
COM 2
RB207
R218 47K
R219
R204 1K
RB211 1K
R207 1K
RB201 1K
R245 1K
R244 1K
D201 MA159
R288 47K
L201 10μH
C202 0.1
C203 2.2 10V
(B-3) Q213 EJECT SWITCH
(C-3) Q212 EJECT SWITCH
RB208 10K
Q213 DTC144EU
Q212 DTC114TU
D205 MA110 (C-3)
(C-11) Q206 INITIAL RESET
(C-11) Q205 SWITCH
(B-11) Q203 SWITCH
R284 680K
R282 1M
R252 100K
Q208 XN6401
R280 100K
C217 2.2 6.3V TA
R279 100K
R281 390K
Q207 XN6501
R278 100K
D204 MA151A
R287 1K
R274 100K
Q206 XN6401
R275 10K
R276 330K
C216 0.1
R273 100K
C215 2.2 10V
Q205 2SK209
R272 100
D203 SB01
R271 2.2M
Q203 2SA1576
R270 33K
R269 68K
Q204 DTC148WU
L202 100μH
C213 10/10V
C214 0.001
C212 0.1
C218 0.022 B
R285 680K
R286 100K
R283 1M
R277 100K
Q211 2SC1623
LITHIUM BATTERY HOLDER
LI 3V
LI GND
(E-12) Q208
(D-12) Q207
-LIMTHIUM BATTERY PRE-END DETECT-
(D-12) Q211 INITIAL RESET
(B-12) Q204 INVERTER
105
55
59 57
58

FD-15P BOARD IC304 M51285BGP

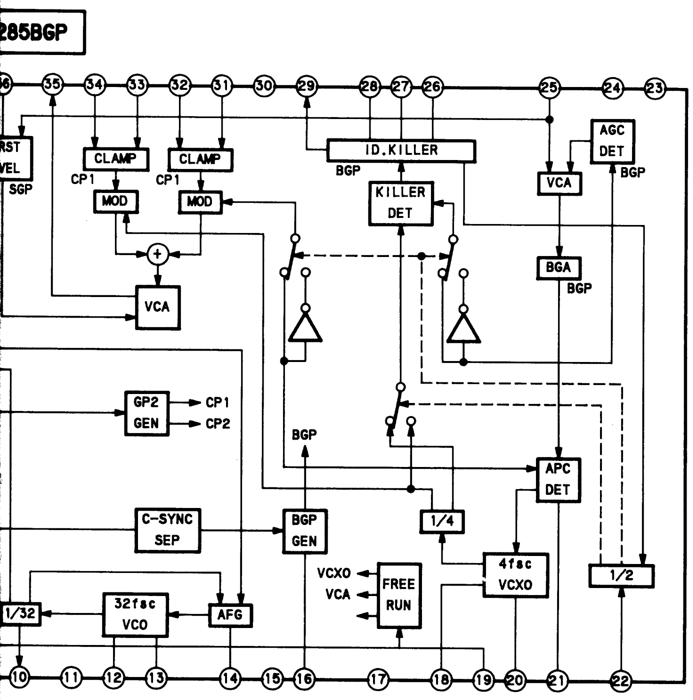

CLAMP
Y/C MIX
SYNC MIX
ERROR AMP
FRAME
CP1
C SYNC SLP
BURST LEVEL
SGP
CLAMP
CLAMP
MOD
MOD
VCA
ID.KILLER
BGP
KILLER DET
VCA
AGC DET
BGA
SYNC DET
SYNC SW
GP2 GEN
CP1
CP2
BGP
APC DET
V-SYNC SEP
C-SYNC SEP
BGP GEN
1/4
CLAMP
CLAMP
4fsc VCXO
1/2
VCXO
VCA
FREE RUN
1/32
32fsc VCO
AFG

6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17

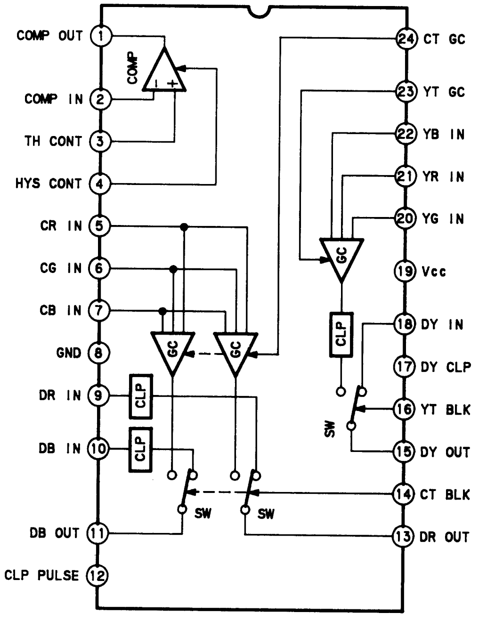
(See page 131.)
TO FC-28P BOARD CN601


IC201 (F-10)
MODE CONTROL
IC201
μPD75316GF
BIAS
Vcc 0
Vcc 1
Vcc 2
CAM POWER
VTR POWER
SYSTEM RESET
TALLY
Vss
K OUT 0
K OUT 1
K OUT 2
K OUT 3
BATT IN
SCK
DATA TO SLV
DATA TO MASTER
SYSTEM SYNCTER
LI PRE END
LINCS PWR ON
DATA TO MODE
DATA TO EE
EE SCK
PB TITLE ON
SELECT 1
SELECT 2
SELECT 3
VTR SW
RESET
K IN 7
K IN 6
K IN 5
X201 32.77 kHz
X202 4.19 MHz
S201 IRIS
S218 FADER
S202 TITLE1
S203 TITLE2
S204 MEMORY
S205 COLOR/MODE
S206 DATE(+)
S207 TIME(NEXT)
S208 PROGRAM AE
S209 WHT BAL
S210 CONTROL UP
S211 GAIN
S212 FOCUS
S213 PUSH AUTO
DOWN
S215 SHUTTER SPEED
S216
S217 AUTO LOCK
IC301 (I-9)
DIGITAL TITLE PROCESS
IC301
CF79028PG
IC205 (A-12)
5V REG
IC205
S81250HG
IC206
S8054ALB
IC206 (B-13)
VOLTAGE DETECT
IC203
μPD7564G
IC203 (C-13)
SIRCS CONTROL
IC202 (D-9)
LANC I/O
IC202 TL 596CDS
Q202 DTC144EU
Q202 SWITCH
Q203 2SA1576
Q203 SWITCH
Q204 DTC148WU
Q204 INVERTER
Q205 2SK209
Q205 SWITCH
Q206 XN6401
Q316 DTA144EU
Q315 SWITCH
CONTROLLER fo
1
2
3
4
5
6

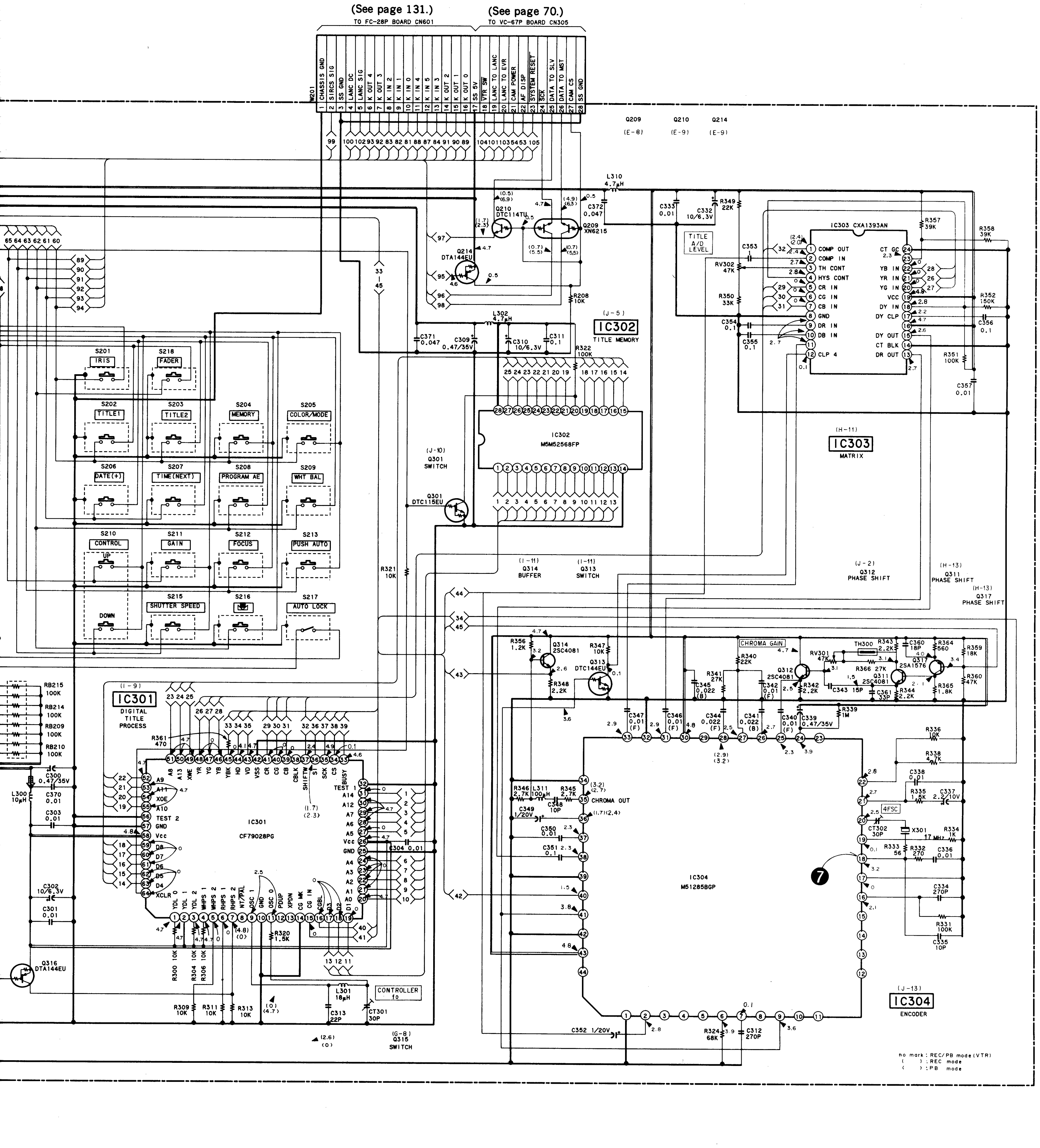
MODE CONTROL


285BGP
CLAMP
CLAMP
CP1
MOD
MOD
VCA
ID.KILLER
KILLER DET
AGC DET
VCA
BGA
BGP
GP2 GEN
CP1
CP2
C-SYNC SEP
BGP GEN
APC DET
1/4
4fsc VCXO
FREE RUN
VCXO
VCA
1/2
1/32
32fsc VCO
AFG

FD-15P BOARD IC303 CXA1393


COMP OUT 1
COMP IN 2
TH CONT 3
HYS CONT 4
CR IN 5
CG IN 6
CB IN 7
GND 8
DR IN 9
DB IN 10
DB OUT 11
CLP PULSE 12
24 CT GC
23 YT GC
22 YB IN
21 YR IN
20 YG IN
19 Vcc
18 DY IN
17 DY CLP
16 YT BLK
15 DY OUT
14 CT BLK
13 DR OUT
COMP
GC
CLP
SW

14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23

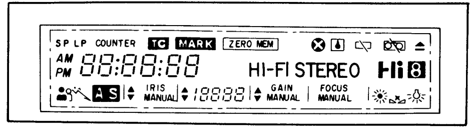

(See page 131.)
TO FC-28P BOARD CN601
(See page 70.)
TO VC-67P BOARD CN305
CN201
CHASSIS GND
SIRCS SIG
SS GND
LANC DC
LANC SIG
K OUT 4
K OUT 3
K IN 2
K IN 0
K IN 4
K IN 5
K IN 3
K OUT 2
K OUT 1
K OUT 0
SS 5V
VTR SW
LANC TO LANC
LANC TO EVR
CAM POWER
AF DISP
SYSTEM RESET
SCK
DATA TO SLV
DATA TO MST
CAM CS
SS GND
Q210 DTC114TU
Q209 XN6215
Q214 DTA144EU
IC302 TITLE MEMORY M5M52568FP
IC303 CXA1393AN
IC303 MATRIX
TITLE A/D LEVEL
S201 IRIS
S218 FADER
S202 TITLE1
S203 TITLE2
S204 MEMORY
S205 COLOR/MODE
S206 DATE(+)
S207 TIME(NEXT)
S208 PROGRAM AE
S209 WHT BAL
S210 CONTROL UP DOWN
S211 GAIN
S212 FOCUS
S213 PUSH AUTO
S215 SHUTTER SPEED
S216
S217 AUTO LOCK
Q301 SWITCH DTC115EU
Q314 BUFFER
Q313 SWITCH
Q312 PHASE SHIFT
Q311 PHASE SHIFT
Q317 PHASE SHIFT
IC301 DIGITAL TITLE PROCESS CF79028PG
IC304 ENCODER M51285BGP
CHROMA GAIN
CHROMA OUT
4FSC
X301 17 MHz
CONTROLLER fo
Q315 SWITCH
Q316 DTA144EU
7
no mark : REC/PB mode (VTR)
( ) : REC mode
( ) : PB mode

MODE CONTROL MODE CONTROL

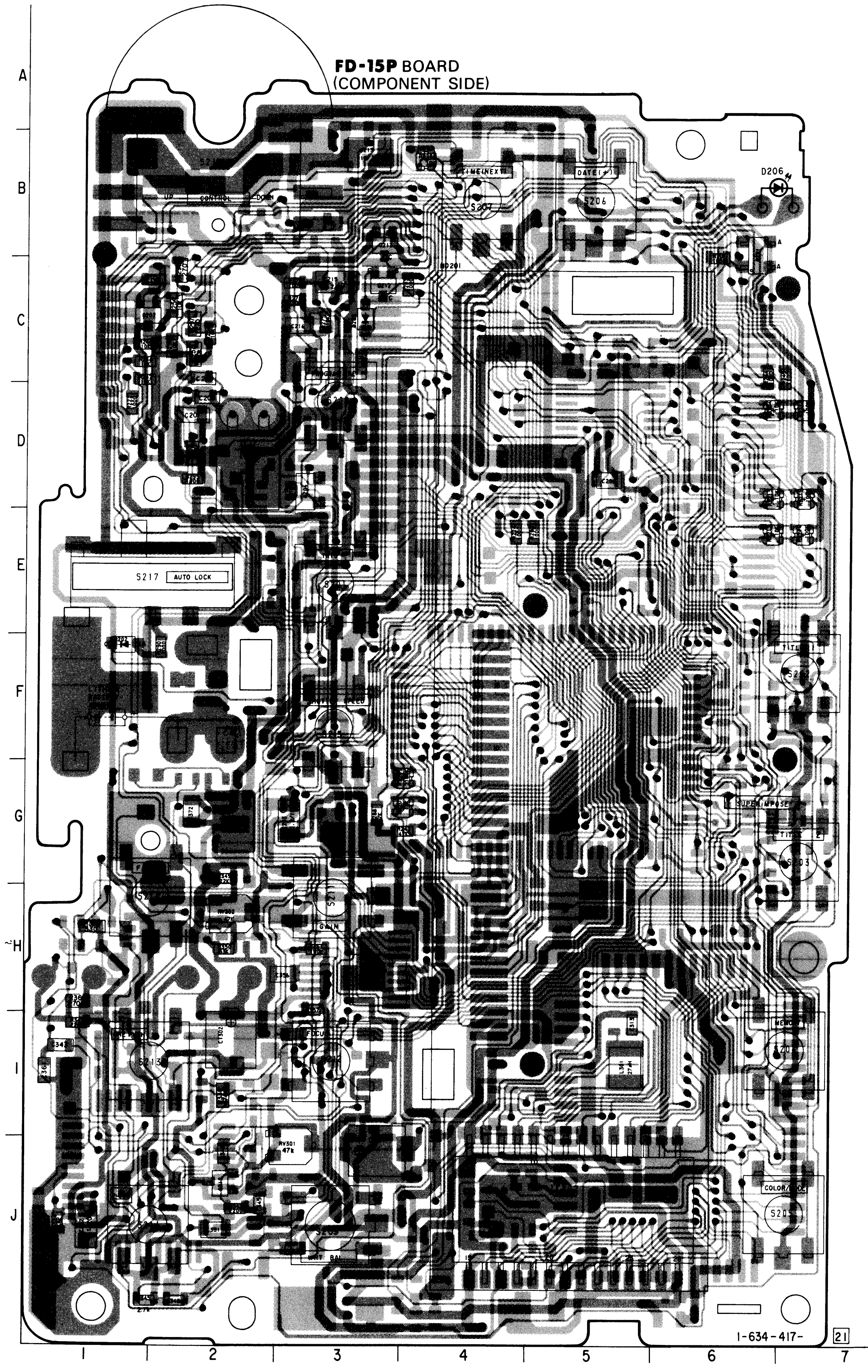
FD-15P (MODE CONTROL) PRINTED WIRING BOARD

—Ref. No. FD-15P BOARD : 5000 series—

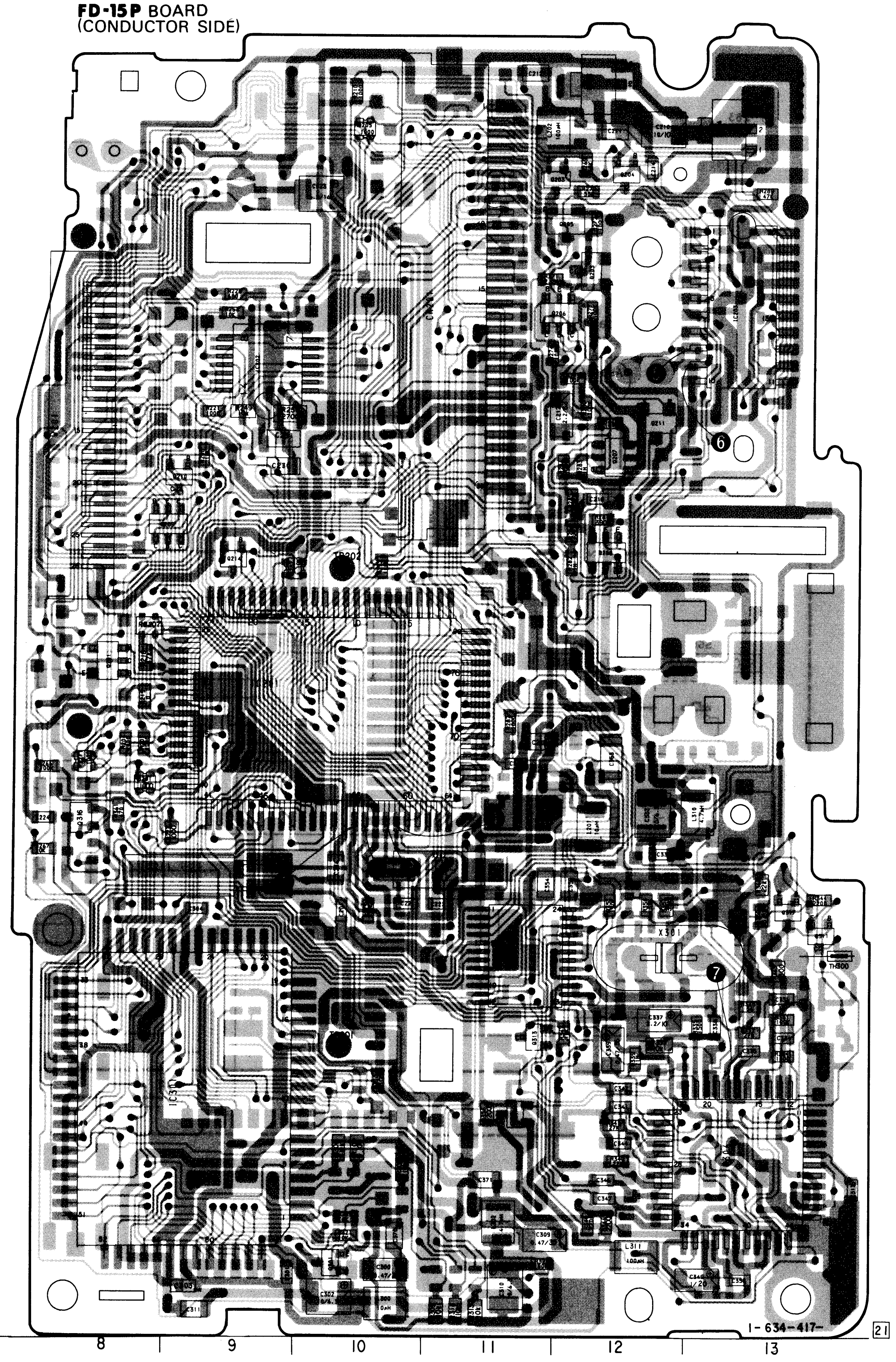
ND201



SP LP COUNTER
TC
MARK
ZERO MEM
AM
PM
88:88:88
HI-FI STEREO
Hi8
A S
IRIS MANUAL
18888
GAIN MANUAL
FOCUS MANUAL

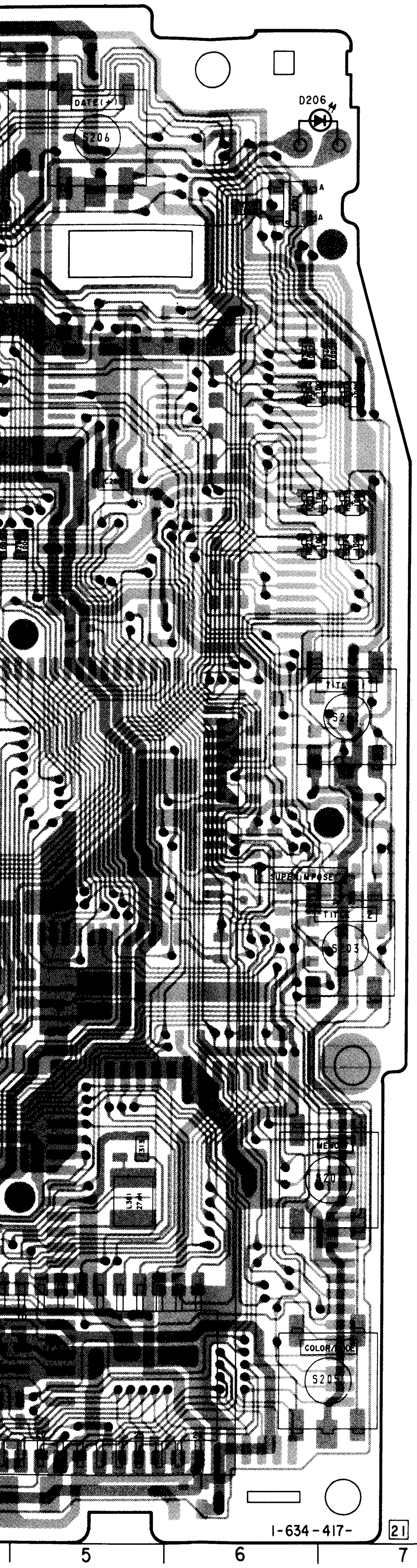


FD-15P BOARD
(COMPONENT SIDE)
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
S217
AUTO LOCK
D206
S206
TIME(NEXT)
DATE
D201
RV301
47k
1-634-417-
21

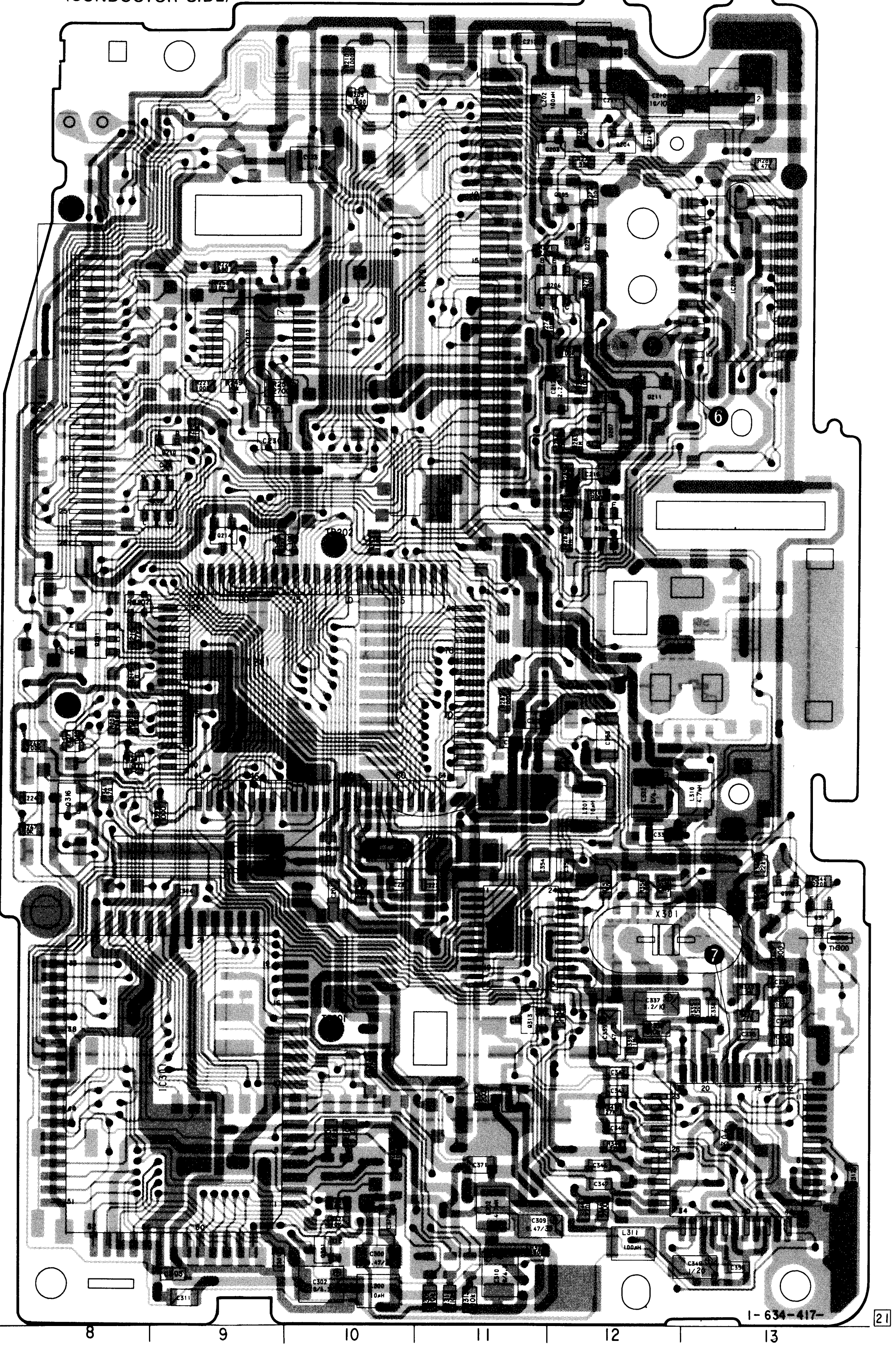


FD-15P BOARD
(CONDUCTOR SIDE)
6
7
X301
L311
8
9
10
11
12
13
1-634-417-
21

D201	8-7
D202	8-7
D203	8-7
D204	8-7
D205	8-7
D206	8-7
IC201	8-7
IC202	8-7
IC203	8-7
IC205	8-7
IC206	8-7
IC301	8-7
IC302	8-7
IC303	8-7
IC304	8-7
Q201	8-7
Q202	8-7
Q203	8-7
Q204	8-7
Q205	8-7
Q206	8-7
Q207	8-7
Q208	8-7
Q209	8-7
Q210	8-7
Q211	8-7
Q212	8-7
Q213	8-7
Q214	8-7
Q301	8-7
Q311	8-7
Q312	8-7
Q313	8-7
Q314	8-7
Q316	8-7
Q317	8-7



FD-15P BOARD
(CONDUCTOR SIDE)



DIODE

D201	8-719-940-45	DIODE DWA010
D202	8-719-404-46	DIODE MA110
D203	8-719-938-72	DIODE SB01-05CP
D204	8-719-420-36	DIODE MA151A
D205	8-719-404-46	DIODE MA110
D206	8-719-812-41	DIODE TLR124

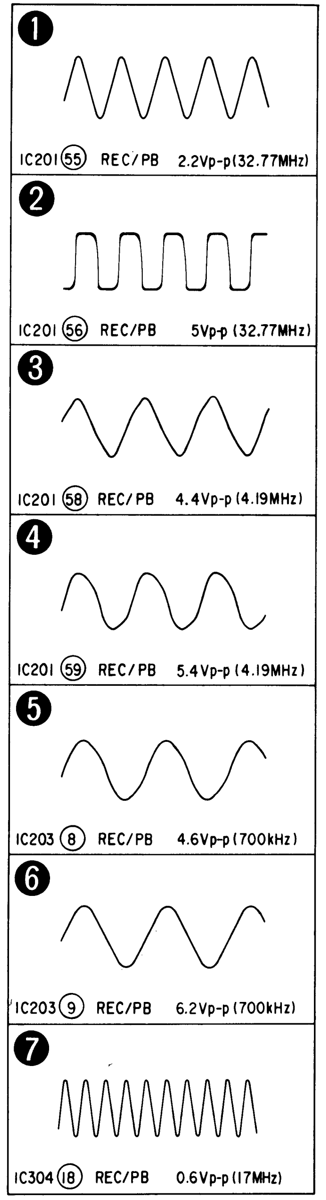
IC

IC201	8-759-151-78	IC UPD75316GF-076-3B9
IC202	8-759-999-02	IC TL1596CDSB
IC203	8-759-145-63	IC UPD7564G-540
IC205	8-759-937-54	IC S-81250HG-RD-S
IC206	8-759-937-56	IC S-8054ALB-LM-S
IC301	8-759-998-30	IC CF79028PG
IC302	8-752-326-23	IC CXK58257M-10L
IC303	8-752-039-49	IC CXA1393AN
IC304	8-759-634-47	IC M51285BGP

TRANSISTOR

Q201	8-729-904-20	TRANSISTOR FMA2
Q202	8-729-905-18	TRANSISTOR DTC144EU
Q203	8-729-905-24	TRANSISTOR 2SA1576-S
Q204	8-729-905-15	TRANSISTOR DTC144WU
Q205	8-729-109-44	TRANSISTOR 2SK94
Q206	8-729-402-78	TRANSISTOR XN6401
Q207	8-729-402-19	TRANSISTOR XN6501
Q208	8-729-402-78	TRANSISTOR XN6401
Q209	8-729-403-10	TRANSISTOR XN6215
Q210	8-729-905-XX	TRANSISTOR DTC114TU
Q211	8-729-100-66	TRANSISTOR 2SC1623
Q212	8-729-905-XX	TRANSISTOR DTC114TU
Q213	8-729-905-18	TRANSISTOR DTC144EU
Q214	8-729-905-12	TRANSISTOR DTA144EU
Q301	8-729-925-91	TRANSISTOR DTC115EU
Q311	8-729-905-35	TRANSISTOR 2SC4081-R
Q312	8-729-905-35	TRANSISTOR 2SC4081-R
Q313	8-729-905-18	TRANSISTOR DTC144EU
Q314	8-729-905-35	TRANSISTOR 2SC4081-R
Q316	8-729-905-12	TRANSISTOR DTA144EU
Q317	8-729-905-24	TRANSISTOR 2SA1576-S

FD-15P BOARD


❶ IC201 (55) REC/PB 2.2Vp-p (32.77MHz)

❷ IC201 (56) REC/PB 5Vp-p (32.77MHz)

❸ IC201 (58) REC/PB 4.4Vp-p (4.19MHz)

❹ IC201 (59) REC/PB 5.4Vp-p (4.19MHz)

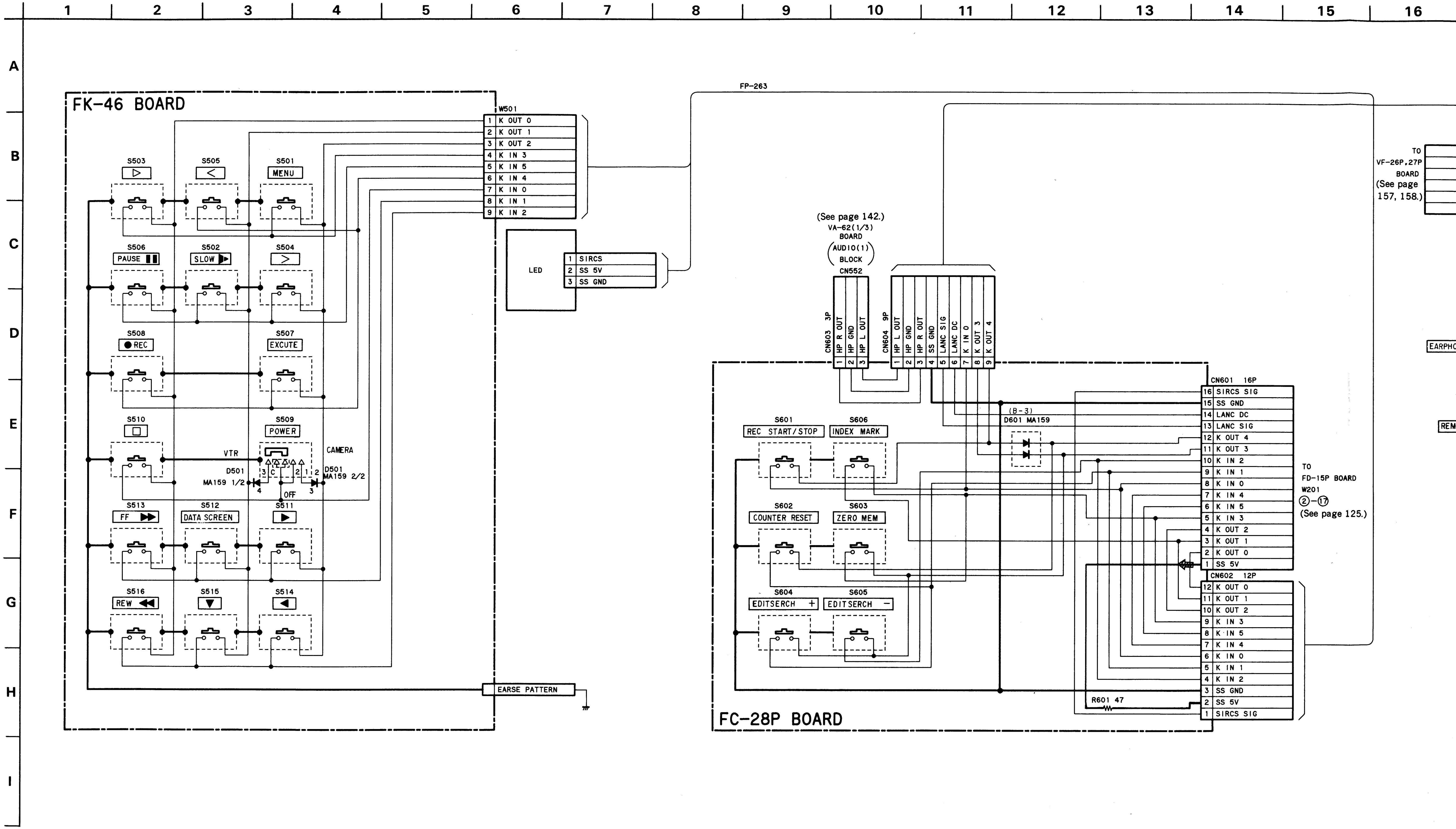
❺ IC203 ⑧ REC/PB 4.6Vp-p (700kHz)

❻ IC203 ⑨ REC/PB 6.2Vp-p (700kHz)

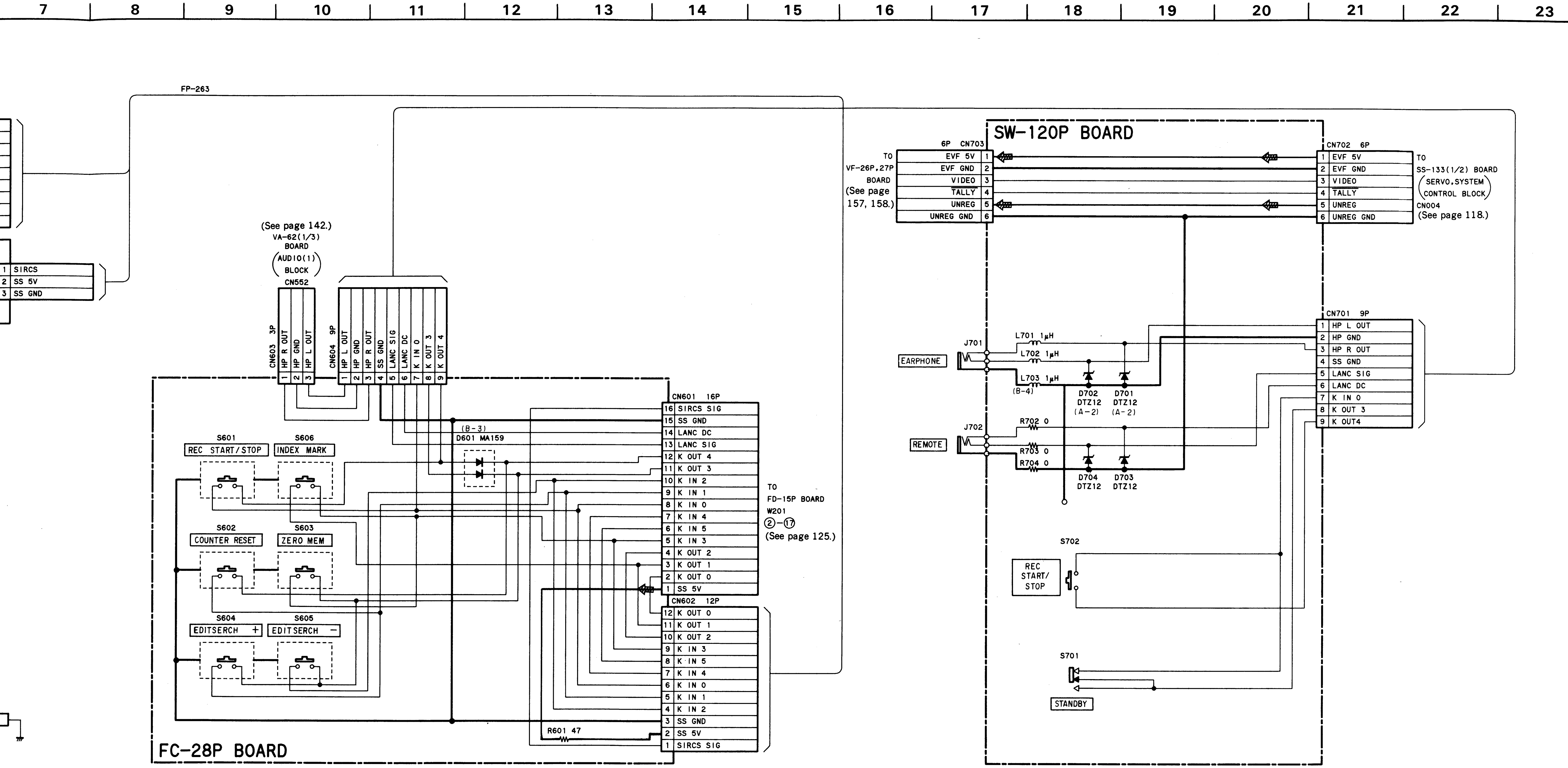
❼ IC304 ⑱ REC/PB 0.6Vp-p (17MHz)

FK-46 (FUNCTION SWITCH), FC-28P (FUNCTION SWITCH), SW-120P (REC START/STOP, STANDBY SWITCH), FP-263 (REMOTE COMMAND RECIEVER) SCHEMATIC DIAGRAM

—Ref. No. FK-46 BOARD : 3000 series, FC-28P, SW-120P, FP-263 BOARDS : 7000 series—



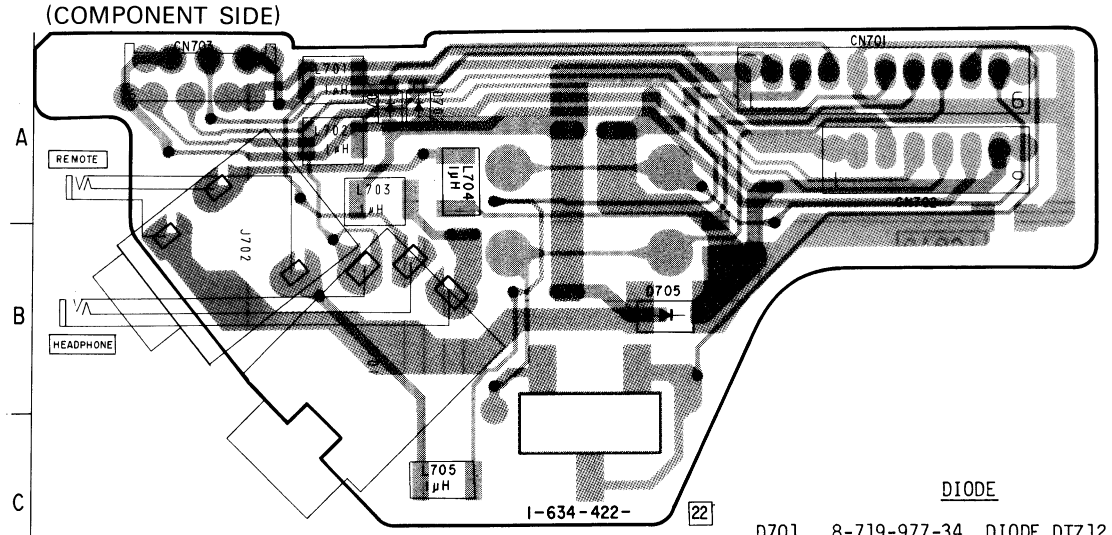
FK-46 BOARD
S503 ▷
S505 <
S501 MENU
S506 PAUSE ▮▮
S502 SLOW ▮▶
S504 >
S508 ● REC
S507 EXCUTE
S510 □
S509 POWER
VTR
CAMERA
D501 MA159 1/2
D501 MA159 2/2
OFF
S513 FF ▶▶
S512 DATA SCREEN
S511 ▶
S516 REW ◀◀
S515 ▼
S514 ◀
W501
1 K OUT 0
2 K OUT 1
3 K OUT 2
4 K IN 3
5 K IN 5
6 K IN 4
7 K IN 0
8 K IN 1
9 K IN 2
EARSE PATTERN
LED
1 SIRCS
2 SS 5V
3 SS GND
FP-263
(See page 142.)
VA-62(1/3) BOARD
(AUDIO(1) BLOCK)
CN552
CN603 3P
1 HP R OUT
2 HP GND
3 HP L OUT
CN604 9P
1 HP L OUT
2 HP GND
3 HP R OUT
4 SS GND
5 LANC SIG
6 LANC DC
7 K IN 0
8 K OUT 3
9 K OUT 4
(B-3)
D601 MA159
S601 REC START/STOP
S606 INDEX MARK
S602 COUNTER RESET
S603 ZERO MEM
S604 EDITSERCH +
S605 EDITSERCH −
R601 47
FC-28P BOARD
CN601 16P
16 SIRCS SIG
15 SS GND
14 LANC DC
13 LANC SIG
12 K OUT 4
11 K OUT 3
10 K IN 2
9 K IN 1
8 K IN 0
7 K IN 4
6 K IN 5
5 K IN 3
4 K OUT 2
3 K OUT 1
2 K OUT 0
1 SS 5V
CN602 12P
12 K OUT 0
11 K OUT 1
10 K OUT 2
9 K IN 3
8 K IN 5
7 K IN 4
6 K IN 0
5 K IN 1
4 K IN 2
3 SS GND
2 SS 5V
1 SIRCS SIG
TO FD-15P BOARD W201 ②-⑰ (See page 125.)
TO VF-26P,27P BOARD (See page 157, 158.)
EARPHO
REM
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I


7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
FP-263
1 SIRCS
2 SS 5V
3 SS GND
(See page 142.)
VA-62(1/3) BOARD
(AUDIO(1) BLOCK)
CN552
CN603 3P
1 HP R OUT
2 HP GND
3 HP L OUT
CN604 9P
1 HP L OUT
2 HP GND
3 HP R OUT
4 SS GND
5 LANC SIG
6 LANC DC
7 K IN 0
8 K OUT 3
9 K OUT 4
(B-3)
D601 MA159
S601
REC START/STOP
S606
INDEX MARK
S602
COUNTER RESET
S603
ZERO MEM
S604
EDITSERCH +
S605
EDITSERCH −
R601 47
FC-28P BOARD
CN601 16P
16 SIRCS SIG
15 SS GND
14 LANC DC
13 LANC SIG
12 K OUT 4
11 K OUT 3
10 K IN 2
9 K IN 1
8 K IN 0
7 K IN 4
6 K IN 5
5 K IN 3
4 K OUT 2
3 K OUT 1
2 K OUT 0
1 SS 5V
TO FD-15P BOARD W201 ②-⑰ (See page 125.)
CN602 12P
12 K OUT 0
11 K OUT 1
10 K OUT 2
9 K IN 3
8 K IN 5
7 K IN 4
6 K IN 0
5 K IN 1
4 K IN 2
3 SS GND
2 SS 5V
1 SIRCS SIG
SW-120P BOARD
6P CN703
1 EVF 5V
2 EVF GND
3 VIDEO
4 TALLY
5 UNREG
6 UNREG GND
TO VF-26P,27P BOARD (See page 157, 158.)
CN702 6P
1 EVF 5V
2 EVF GND
3 VIDEO
4 TALLY
5 UNREG
6 UNREG GND
TO SS-133(1/2) BOARD (SERVO,SYSTEM CONTROL BLOCK) CN004 (See page 118.)
CN701 9P
1 HP L OUT
2 HP GND
3 HP R OUT
4 SS GND
5 LANC SIG
6 LANC DC
7 K IN 0
8 K OUT 3
9 K OUT4
J701
EARPHONE
L701 1μH
L702 1μH
L703 1μH
(B-4)
D702 DTZ12 (A-2)
D701 DTZ12 (A-2)
J702
REMOTE
R702 0
R703 0
R704 0
D704 DTZ12
D703 DTZ12
S702
REC START/ STOP
S701
STANDBY

FK-46 (FUNCTION SWITCH), FC-28P (FUNCTION SWITCH), SW-120P (REC START/STOP, STANDBY SWITCH), FP-263 (REMOTE COMMAND RECIEVER) PRINTED WIRING BOARD

—Ref. No. FK-46 BOARD: 3000 series, FC-28P, SW-120P, FP-263 BOARDS: 7000 series—

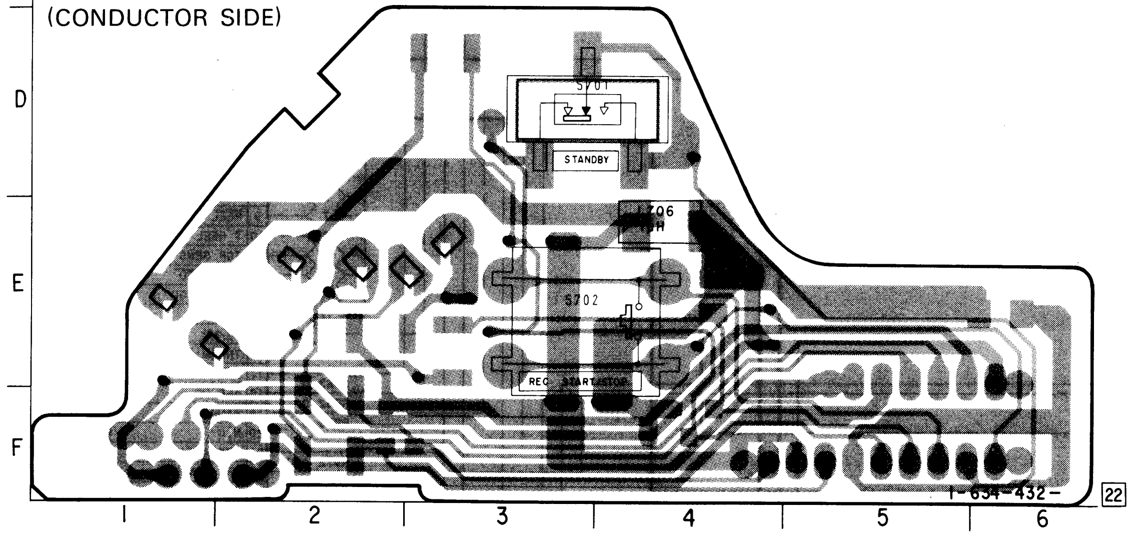
SW-120P BOARD
(COMPONENT SIDE)



CN703
L701 1μH
L702 1μH
L703 1μH
L704 1μH
D702
D701
CN701
CN702
J702
D705
L705 1μH
REMOTE
HEADPHONE
A
B
C
1-634-422-
22

	DIODE	
D701	8-719-977-34	DIODE DTZ12
D702	8-719-977-34	DIODE DTZ12
D705	8-719-977-34	DIODE DTZ12

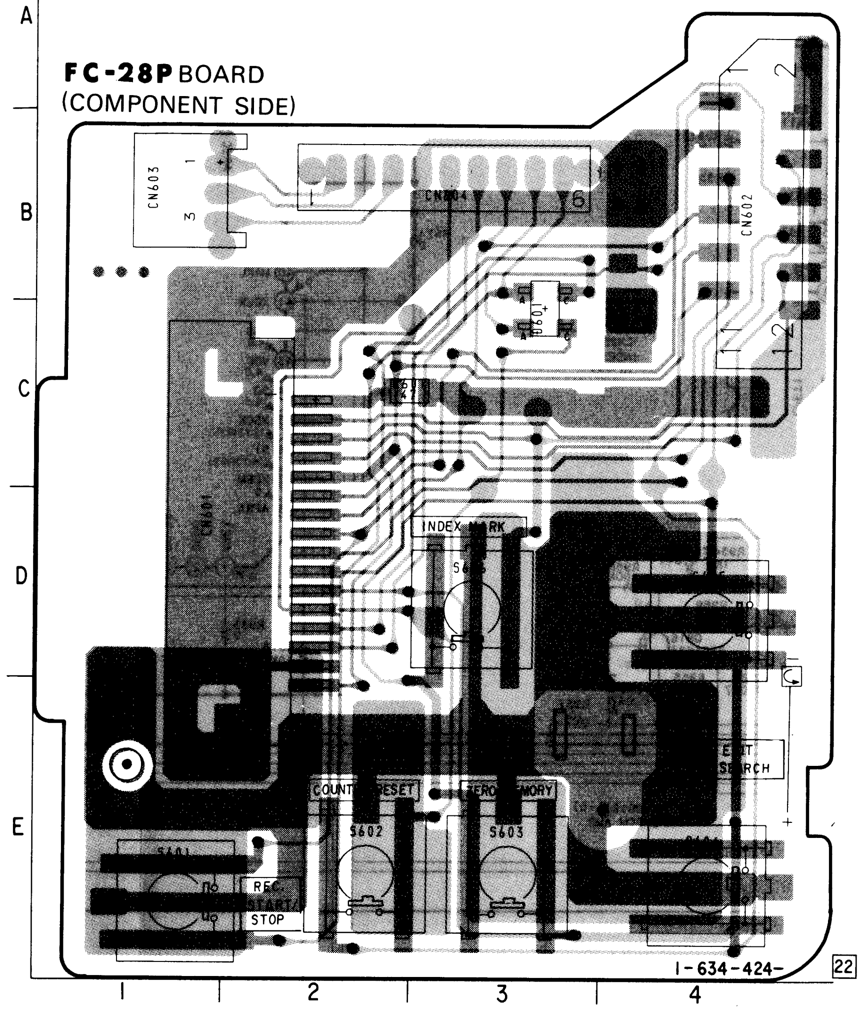
SW-120P BOARD
(CONDUCTOR SIDE)



S701
STANDBY
L706 1μH
S702
REC START/STOP
D
E
F
1-634-432-
22
1
2
3
4
5
6

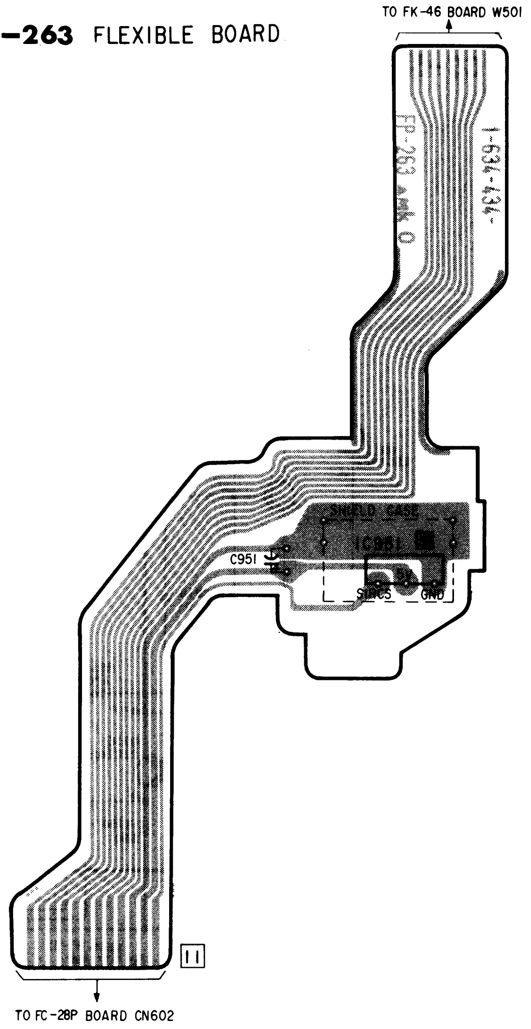
	DIODE	
D601	8-719-940-45	DIODE DWA010

FC-28P BOARD
(COMPONENT SIDE)



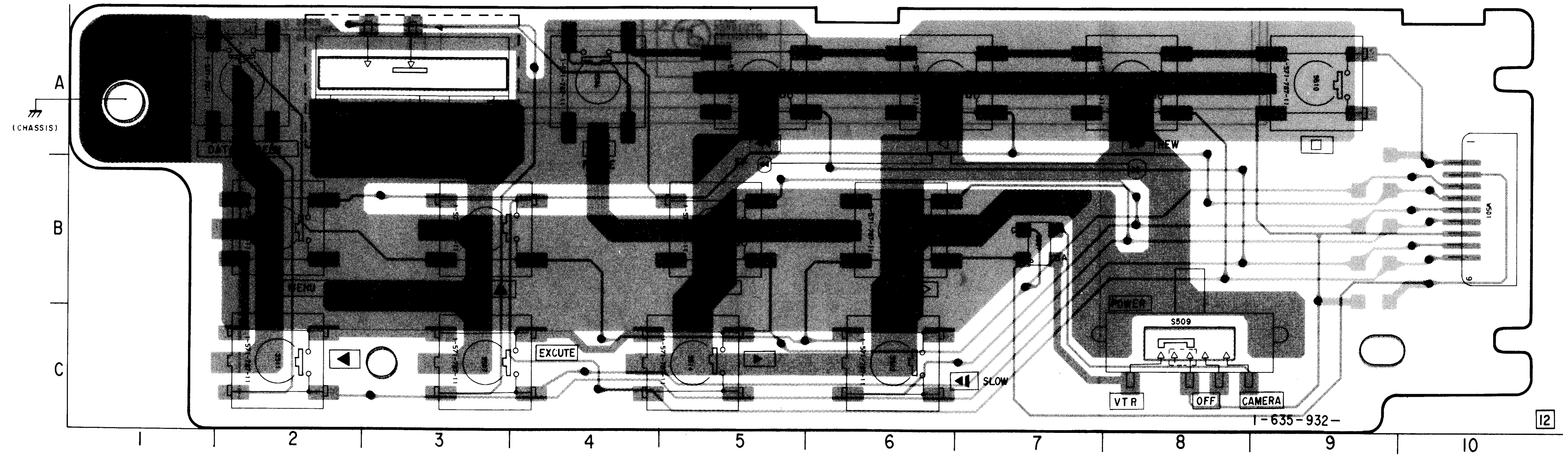
A
B
C
D
E
CN603
CN604
CN602
CN601
D601
INDEX MARK
S601
REC START STOP
COUNT RESET
S602
ZERO MEMORY
S603
EDIT SEARCH
1-634-424-
22
1
2
3
4

FP-263 FLEXIBLE BOARD



TO FK-46 BOARD W501
FP-263
1-634-434-
SHIELD CASE
C951
IC951
SIRCS
GND
11
TO FC-28P BOARD CN602

FK-46 BOARD
(CONDUCTOR SIDE)

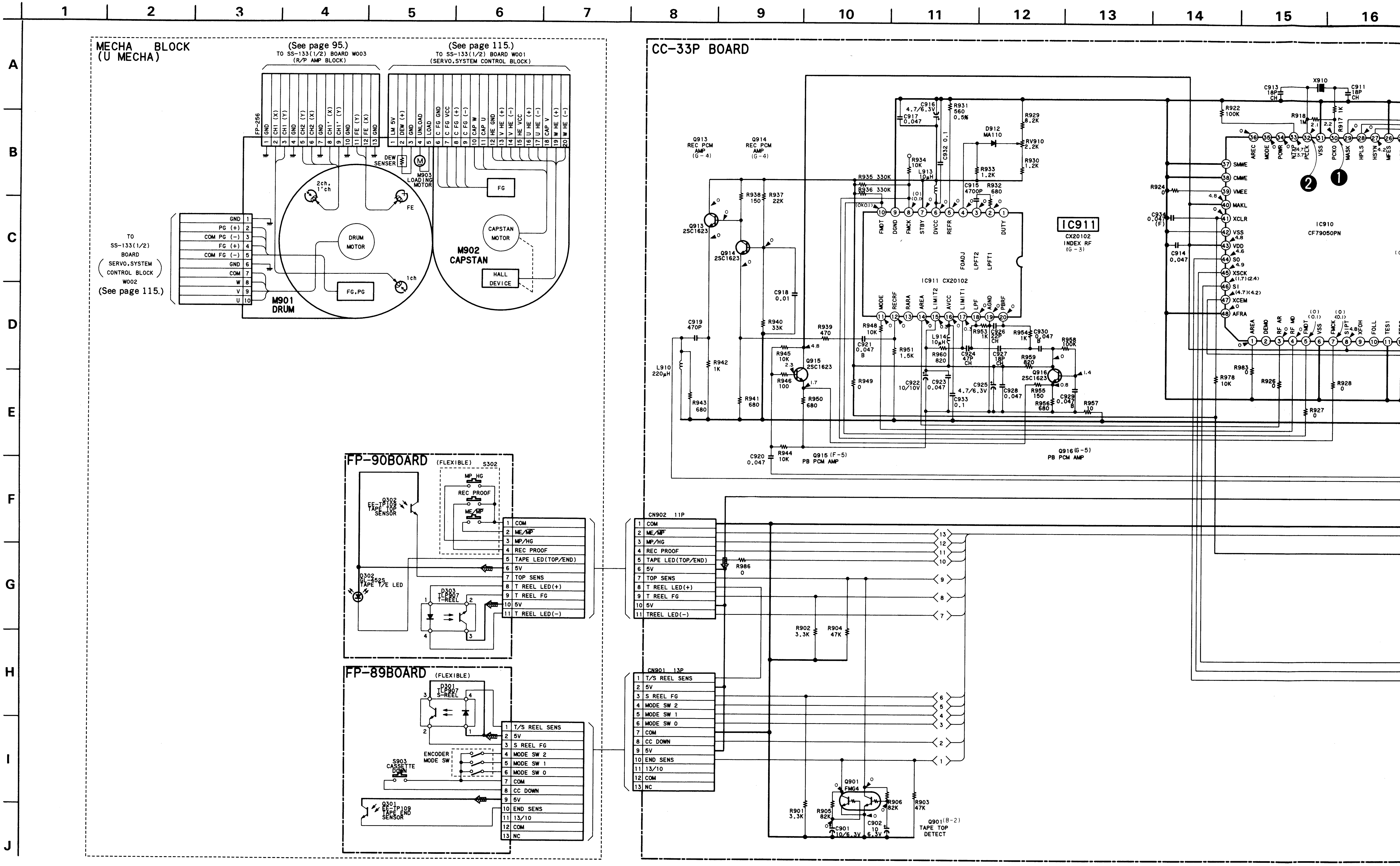


A
B
C
(CHASSIS)
EXCUTE
SLOW
POWER
S509
VTR
OFF
CAMERA
W501
1-635-932-
12
1
2
3
4
5
6
7
8
9
10

	DIODE	
D501	8-719-940-45	DIODE DWA010

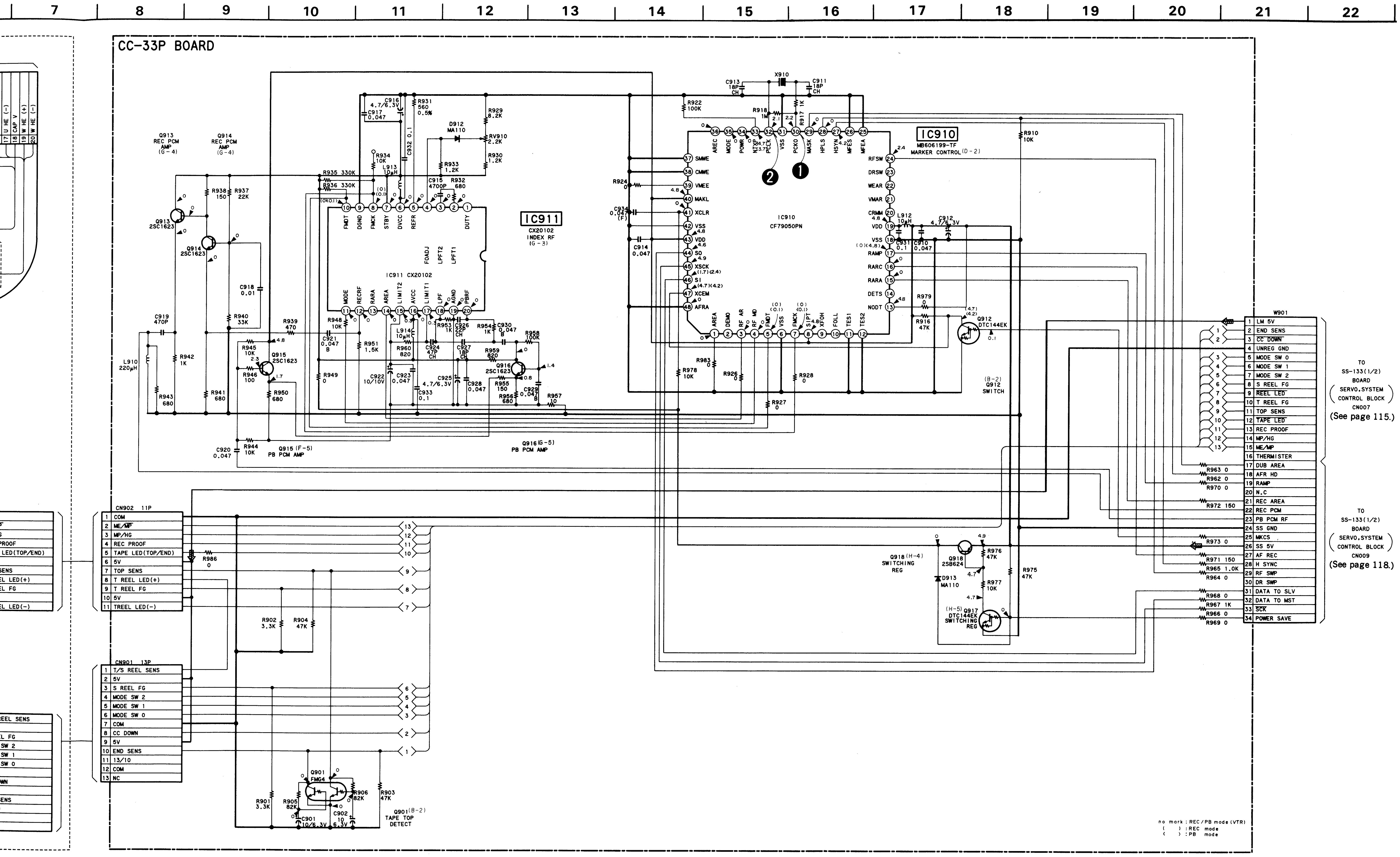
CC-33P (INDEX), FP-89 (MODE SWITCH, SENSOR), FP-90 (TAPE SELECT SWITCH SENSOR) SCHEMATIC DIAGRAM

—Ref. No. CC-33P BOARD : 6000 series, FP-89, FP-90 BOARDS : 7000 series—



MECHA BLOCK (U MECHA)
(See page 95.) TO SS-133(1/2) BOARD W003 (R/P AMP BLOCK)
(See page 115.) TO SS-133(1/2) BOARD W001 (SERVO,SYSTEM CONTROL BLOCK)
TO SS-133(1/2) BOARD (SERVO,SYSTEM CONTROL BLOCK) W002 (See page 115.)
M901 DRUM
DRUM MOTOR
M902 CAPSTAN
CAPSTAN MOTOR
HALL DEVICE
FG
FG,PG
M903 LOADING MOTOR
DEW SENSER
CC-33P BOARD
IC911 CX20102 INDEX RF (G-3)
IC910 CF79050PN
Q913 REC PCM AMP (G-4)
Q914 REC PCM AMP (G-4)
Q915 (F-5) PB PCM AMP
Q916 (G-5) PB PCM AMP
Q901 (B-2) TAPE TOP DETECT
FP-90BOARD (FLEXIBLE)
S302
MP HG
REC PROOF
ME/MP
Q302 EE-TP109 TAPE TOP SENSOR
D302 GL-452S TAPE T/E LED
D303 TLP907 T-REEL
FP-89BOARD (FLEXIBLE)
D301 TLP907 S-REEL
ENCODER MODE SW
S903 CASSETTE DOWN
Q301 EE-TP109 TAPE END SENSOR
CN902 11P
CN901 13P

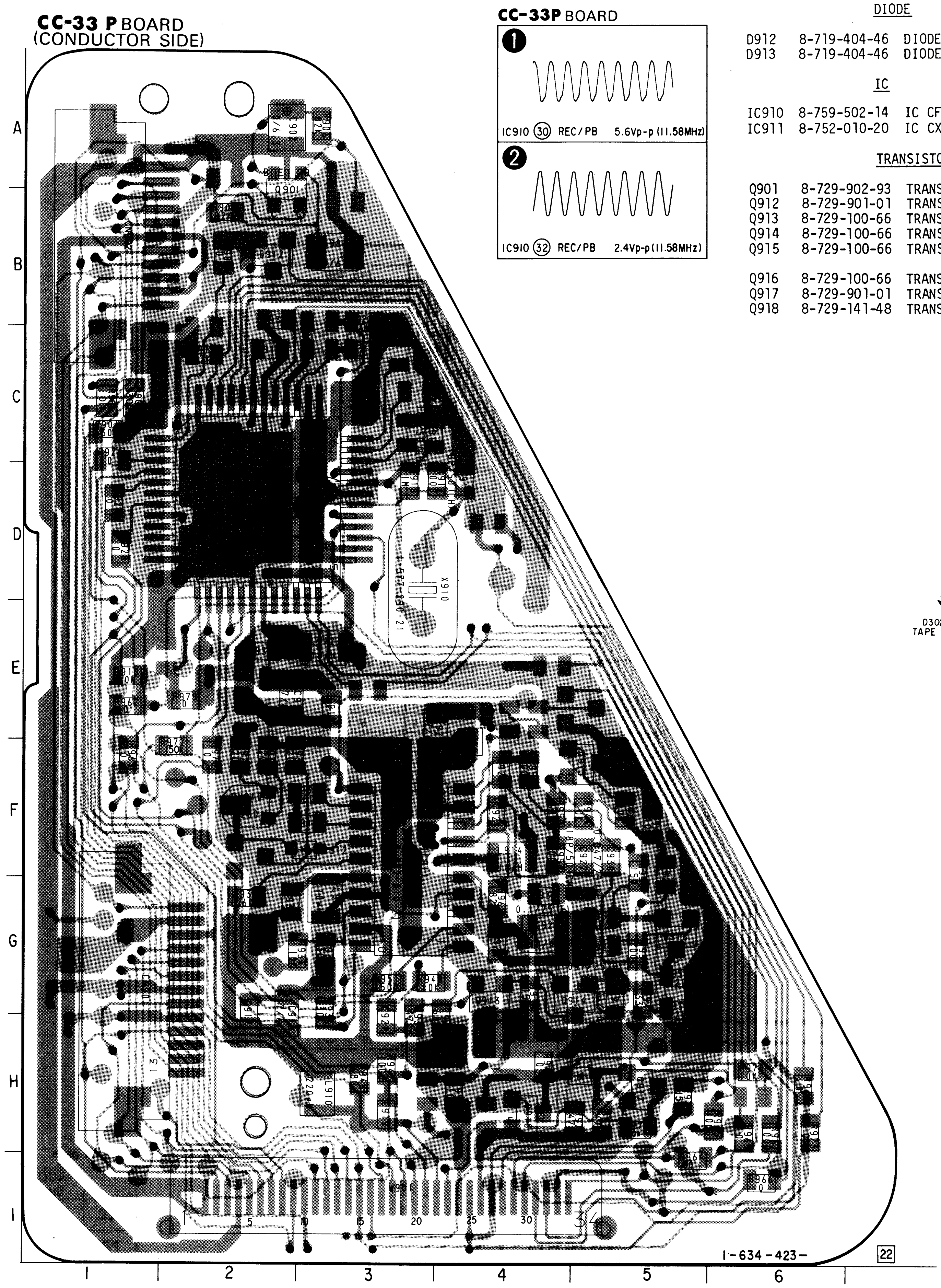
CCD-V700E


7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
CC-33P BOARD
IC910
MB606199-TF
MARKER CONTROL (D-2)
IC910
CF79050PN
IC911
CX20102
INDEX RF
(G-3)
IC911 CX20102
Q913
REC PCM AMP
(G-4)
Q914
REC PCM AMP
(G-4)
Q913 2SC1623
Q914 2SC1623
Q915 2SC1623
Q915 (F-5)
PB PCM AMP
Q916 2SC1623
Q916 (G-5)
PB PCM AMP
Q912 DTC144EK
(B-2)
Q912
SWITCH
Q918 2SB624
Q918 (H-4)
SWITCHING REG
Q917 DTC144EK
(H-5) Q917 DTC144EK
SWITCHING REG
D912 MA110
D913 MA110
X910
Q901 FMG4
Q901 (B-2)
TAPE TOP DETECT
CN902 11P
1 COM
2 ME/MP
3 MP/HG
4 REC PROOF
5 TAPE LED(TOP/END)
6 5V
7 TOP SENS
8 T REEL LED(+)
9 T REEL FG
10 5V
11 TREEL LED(-)
CN901 13P
1 T/S REEL SENS
2 5V
3 S REEL FG
4 MODE SW 2
5 MODE SW 1
6 MODE SW 0
7 COM
8 CC DOWN
9 5V
10 END SENS
11 13/10
12 COM
13 NC
W901
1 LM 5V
2 END SENS
3 CC DOWN
4 UNREG GND
5 MODE SW 0
6 MODE SW 1
7 MODE SW 2
8 S REEL FG
9 REEL LED
10 T REEL FG
11 TOP SENS
12 TAPE LED
13 REC PROOF
14 MP/HG
15 ME/MP
16 THERMISTER
17 DUB AREA
18 AFR HD
19 RAMP
20 N.C
21 REC AREA
22 REC PCM
23 PB PCM RF
24 SS GND
25 MKCS
26 SS 5V
27 AF REC
28 H SYNC
29 RF SWP
30 DR SWP
31 DATA TO SLV
32 DATA TO MST
33 SCK
34 POWER SAVE
TO SS-133(1/2) BOARD (SERVO,SYSTEM CONTROL BLOCK CN007)
(See page 115.)
TO SS-133(1/2) BOARD (SERVO,SYSTEM CONTROL BLOCK CN009)
(See page 118.)
17 U HE (-)
18 CAP V
19 W HE (+)
20 W HE (-)
no mark : REC/PB mode (VTR)
( ) : REC mode
( ) : PB mode
❶
❷

CC-33P (INDEX), FP-89 (MODE SWITCH, SENSOR), FP-90 (TAPE SELECT SWITCH SENSOR) PRINTED WIRING BOARD

—Ref. No. CC-33P BOARD : 6000 series, FP-89, FP-90 BOARDS : 7000 series—

CC-33 P BOARD
(CONDUCTOR SIDE)


A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
Q901
Q912
X910
1-577-290-21
Q914
Q913
Q918
1
5
10
15
20
25
30
34
1-634-423-
22

CC-33P BOARD

❶
IC910 ㉚ REC/PB 5.6Vp-p (11.58MHz)
❷
IC910 ㉜ REC/PB 2.4Vp-p (11.58MHz)

DIODE

D912	8-719-404-46	DIODE MA110
D913	8-719-404-46	DIODE MA110

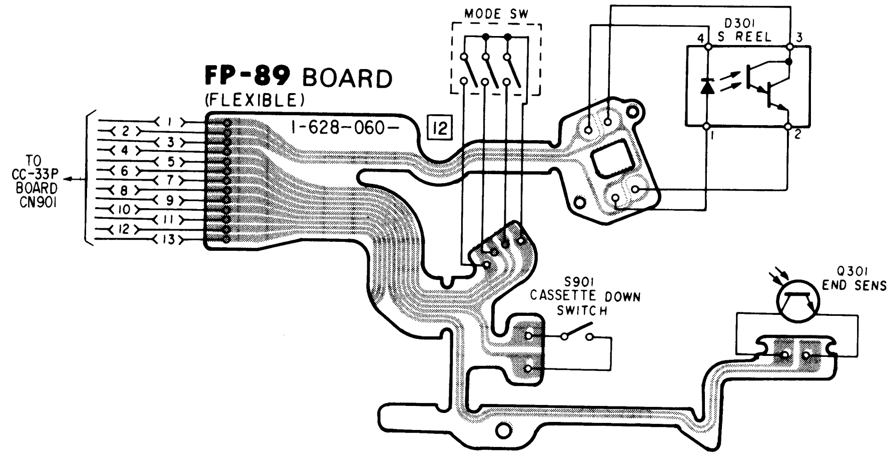
IC

IC910	8-759-502-14	IC CF79050PV
IC911	8-752-010-20	IC CX20102

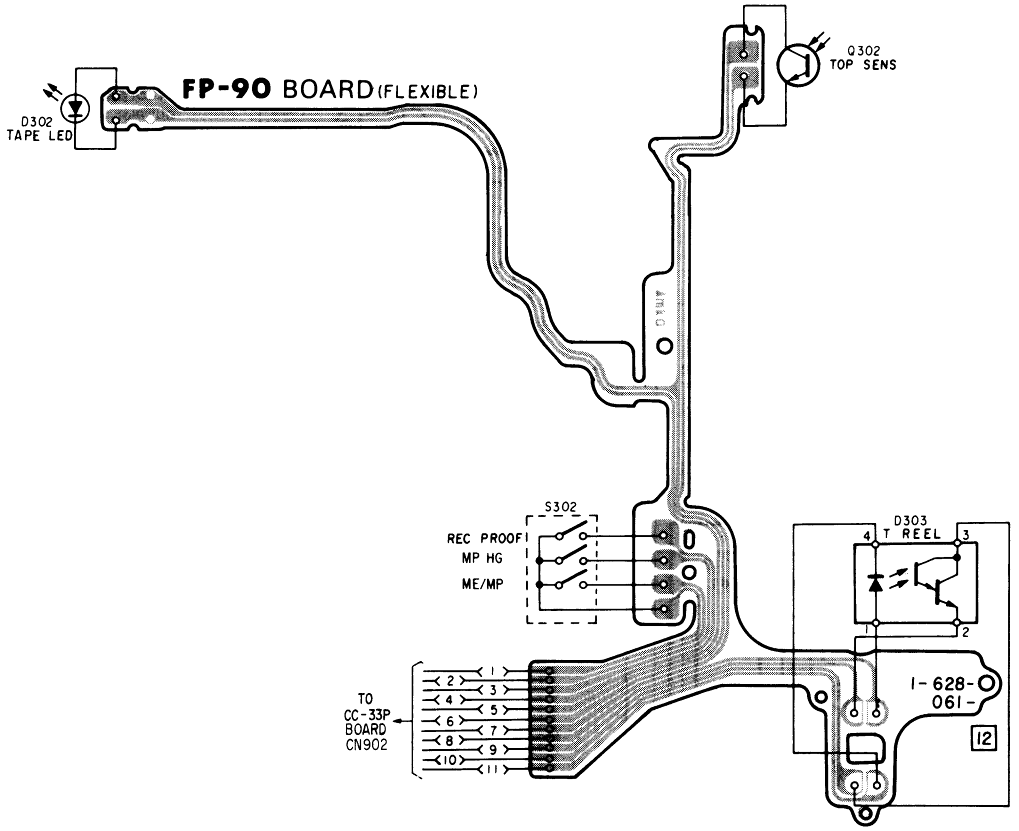
TRANSISTOR

Q901	8-729-902-93	TRANSISTOR FMG4
Q912	8-729-901-01	TRANSISTOR DTC144EK
Q913	8-729-100-66	TRANSISTOR 2SC1623
Q914	8-729-100-66	TRANSISTOR 2SC1623
Q915	8-729-100-66	TRANSISTOR 2SC1623
Q916	8-729-100-66	TRANSISTOR 2SC1623
Q917	8-729-901-01	TRANSISTOR DTC144EK
Q918	8-729-141-48	TRANSISTOR 2SB624-BV345

FP-89 BOARD
(FLEXIBLE)

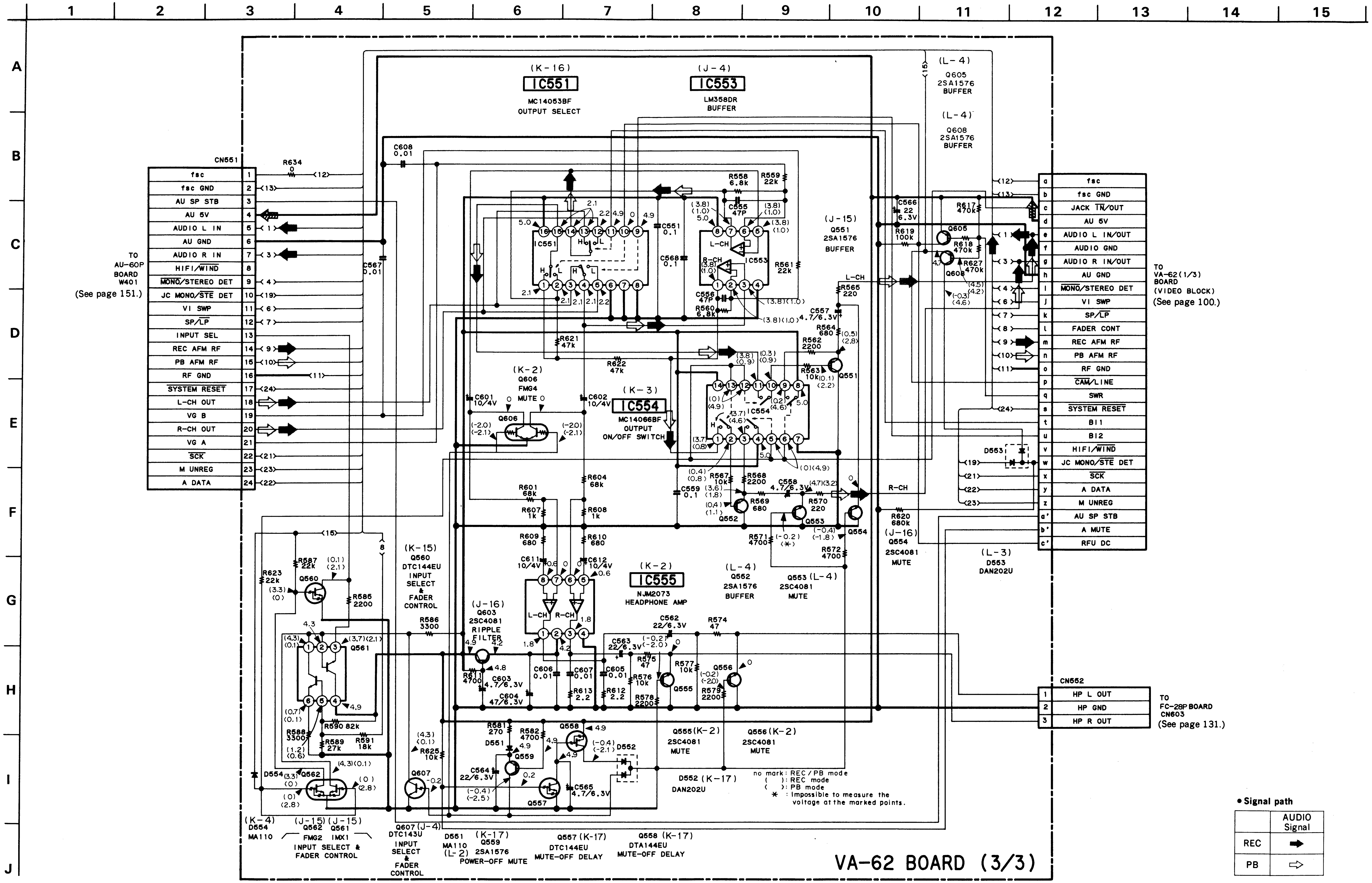

MODE SW
D301
S REEL
4
3
1
2
1-628-060-
12
1
2
3
4
5
6
7
8
9
10
11
12
13
TO
CC-33P
BOARD
CN901
S901
CASSETTE DOWN
SWITCH
Q301
END SENS

FP-90 BOARD(FLEXIBLE)


D302
TAPE LED
Q302
TOP SENS
S302
REC PROOF
MP HG
ME/MP
D303
T REEL
4
3
1
2
1-628-
061-
12
1
2
3
4
5
6
7
8
9
10
11
TO
CC-33P
BOARD
CN902

VA-62 (Y/CHROMA SIGNAL PROCESS, AUDIO SIGNAL PROCESS) SCHEMATIC DIAGRAM

—Ref. No. VA-62 BOARD : 1000 series—



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I J
CN551
fsc
fsc GND
AU SP STB
AU 5V
AUDIO L IN
AU GND
AUDIO R IN
HIFI/WIND
MONO/STEREO DET
JC MONO/STE DET
VI SWP
SP/LP
INPUT SEL
REC AFM RF
PB AFM RF
RF GND
SYSTEM RESET
L-CH OUT
VG B
R-CH OUT
VG A
SCK
M UNREG
A DATA
TO AU-60P BOARD W401
(See page 151.)
(K-16) IC551 MC14053BF OUTPUT SELECT
(J-4) IC553 LM358DR BUFFER
(L-4) Q605 2SA1576 BUFFER
(L-4) Q608 2SA1576 BUFFER
(J-15) Q551 2SA1576 BUFFER
(K-2) Q606 FMG4 MUTE
(K-3) IC554 MC14066BF OUTPUT ON/OFF SWITCH
(K-2) IC555 NJM2073 HEADPHONE AMP
(L-4) Q552 2SA1576 BUFFER
Q553 (L-4) 2SC4081 MUTE
(J-16) Q554 2SC4081 MUTE
(L-3) D553 DAN202U
(K-15) Q560 DTC144EU INPUT SELECT & FADER CONTROL
(J-16) Q603 2SC4081 RIPPLE FILTER
Q555 (K-2) 2SC4081 MUTE
Q556 (K-2) 2SC4081 MUTE
D552 (K-17) DAN202U
(K-4) D554 MA110
(J-15) Q562 FMG2
(J-15) Q561 IMX1
INPUT SELECT & FADER CONTROL
Q607 (J-4) DTC143U INPUT SELECT & FADER CONTROL
D551 MA110 (L-2)
(K-17) Q559 2SA1576 POWER-OFF MUTE
Q557 (K-17) DTC144EU MUTE-OFF DELAY
Q558 (K-17) DTA144EU MUTE-OFF DELAY
R634 0
C608 0.01
R558 6.8k
R559 22k
C555 47P
R561 22k
C551 0.1
C568 0.1
C556 47P
R560 6.8k
R565 220
C557 4.7/6.3V
R564 680
R562 2200
R563 10k
R621 47k
R622 47k
C601 10/4V
C602 10/4V
R567 10k
R568 2200
C558 4.7/6.3V
C559 0.1
R569 680
R570 220
R571 4700
R572 4700
R601 68k
R604 68k
R607 1k
R608 1k
R609 680
R610 680
C611 10/4V
C612 10/4V
C566 22 6.3V
R619 100k
R617 470k
R618 470k
R627 470k
R620 680k
R623 22k
R587 22k
R585 2200
R586 3300
R611 4700
C603 4.7/6.3V
C604 47/6.3V
C606 0.01
C607 0.01
C605 0.01
R613 2.2
R612 2.2
C562 22/6.3V
R574 47
C563 22/6.3V
R575 47
R576 10k
R577 10k
R578 2200
R579 2200
R590 82k
R588 3300
R589 27k
R591 18k
R581 270
R582 4700
R625 10k
C564 22/6.3V
C565 4.7/6.3V
L-CH
R-CH
fsc
fsc GND
JACK IN/OUT
AU 5V
AUDIO L IN/OUT
AUDIO GND
AUDIO R IN/OUT
AU GND
MONO/STEREO DET
VI SWP
SP/LP
FADER CONT
REC AFM RF
PB AFM RF
RF GND
CAM/LINE
SWR
SYSTEM RESET
B11
B12
HIFI/WIND
JC MONO/STE DET
SCK
A DATA
M UNREG
AU SP STB
A MUTE
RFU DC
TO VA-62 (1/3) BOARD (VIDEO BLOCK)
(See page 100.)
CN552
HP L OUT
HP GND
HP R OUT
TO FC-28P BOARD CN603
(See page 131.)
no mark : REC/PB mode
( ) : REC mode
( ) : PB mode
* : Impossible to measure the voltage at the marked points.
VA-62 BOARD (3/3)

• **Signal path**

	AUDIO Signal
REC	➡
PB	⇨

DIODE

D410	8-719-941-09	DIODE DAP202U
D415	8-719-421-30	DIODE MA141A
D417	8-719-941-86	DIODE DAN202U
D419	8-719-941-09	DIODE DAP202U
D420	8-719-941-86	DIODE DAN202U
D422	8-719-941-86	DIODE DAN202U
D423	8-719-941-86	DIODE DAN202U
D427	8-719-941-86	DIODE DAN202U
D428	8-719-941-86	DIODE DAN202U
D429	8-719-941-86	DIODE DAN202U
D432	8-719-941-86	DIODE DAN202U
D434	8-719-941-09	DIODE DAP202U
D435	8-719-941-86	DIODE DAN202U
D436	8-719-941-86	DIODE DAN202U
D437	8-719-941-86	DIODE DAN202U
D551	8-719-404-46	DIODE MA110
D552	8-719-941-86	DIODE DAN202U
D553	8-719-941-86	DIODE DAN202U
D554	8-719-404-46	DIODE MA110
D650	8-719-941-86	DIODE DAN202U
D651	8-719-941-86	DIODE DAN202U
D652	8-719-941-86	DIODE DAN202U
D653	8-719-941-86	DIODE DAN202U
D654	8-719-941-86	DIODE DAN202U
D655	8-719-800-76	DIODE 1SS226
D656	8-719-941-86	DIODE DAN202U
D657	8-719-800-76	DIODE 1SS226
D658	8-719-941-86	DIODE DAN202U
D659	8-719-941-86	DIODE DAN202U
D661	8-719-941-86	DIODE DAN202U
D662	8-719-951-22	DIODE IMN10
D663	8-719-941-86	DIODE DAN202U
D664	8-719-941-86	DIODE DAN202U
D667	8-719-941-86	DIODE DAN202U
D669	8-719-977-22	DIODE DTZ9.1
D670	8-719-977-22	DIODE DTZ9.1
D671	8-719-977-22	DIODE DTZ9.1
D672	8-719-977-22	DIODE DTZ9.1
D673	8-719-800-76	DIODE 1SS226
D674	8-719-977-22	DIODE DTZ9.1
D675	8-719-977-22	DIODE DTZ9.1
D676	8-719-977-22	DIODE DTZ9.1
D677	8-719-977-22	DIODE DTZ9.1
D678	8-719-977-22	DIODE DTZ9.1
D679	8-719-977-22	DIODE DTZ9.1
D680	8-719-977-22	DIODE DTZ9.1
D681	8-719-977-22	DIODE DTZ9.1
D690	8-719-941-86	DIODE DAN202U

IC

IC416	8-759-710-09	IC NJM2233AM
IC551	8-759-009-07	IC MC14053BF
IC553	8-759-998-98	IC LM358D
IC554	8-759-932-54	IC MC14066BF
IC555	8-759-701-02	IC NJM2073M
IC650	8-752-036-19	IC CXA1207R
IC651	8-752-036-20	IC CXA1208R
IC652	8-759-605-61	IC CXA1203N
IC653	8-759-925-60	IC BA401
IC654	8-752-009-51	IC CX20095A
IC656	8-759-320-76	IC HA118070FP
IC657	8-752-333-24	IC CXL1506M
IC658	8-752-333-24	IC CXL1506M
IC659	8-759-710-29	IC NJM2235M
IC660	8-759-710-07	IC NJM2234M
IC661	8-759-710-07	IC NJM2234M
IC662	8-759-009-22	IC MC14094BF
IC663	8-759-710-29	IC NJM2235M

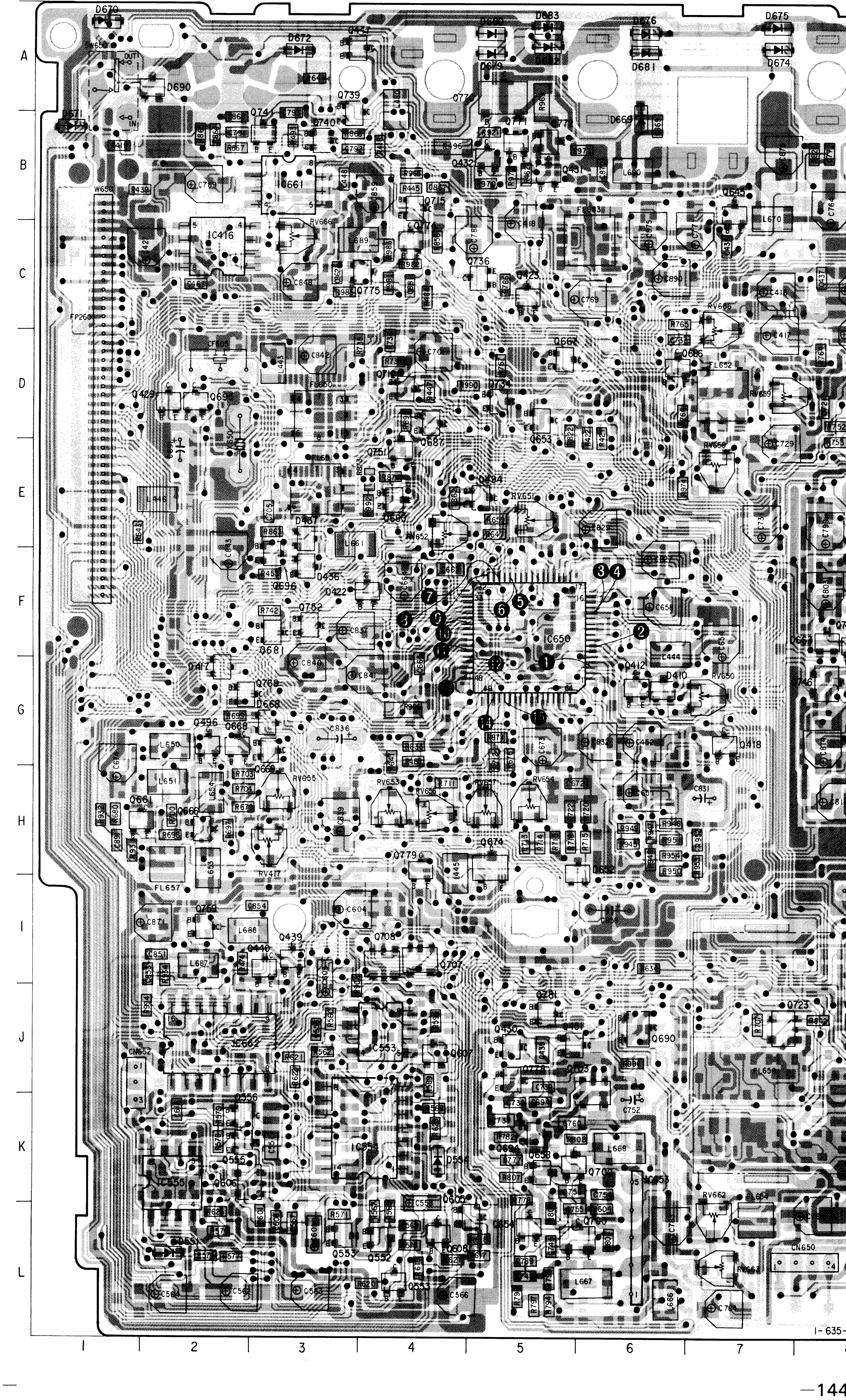
TRANSISTOR

Q411	8-729-905-23	TRANSISTOR 2SA1576-R
Q415	8-729-905-23	TRANSISTOR 2SA1576-R
Q416	8-729-905-35	TRANSISTOR 2SC4081-R
Q417	8-729-905-12	TRANSISTOR DTA144EU
Q418	8-729-905-35	TRANSISTOR 2SC4081-R
Q421	8-729-905-23	TRANSISTOR 2SA1576-R
Q422	8-729-905-18	TRANSISTOR DTC144EU
Q423	8-729-905-35	TRANSISTOR 2SC4081-R
Q426	8-729-905-35	TRANSISTOR 2SC4081-R
Q427	8-729-905-35	TRANSISTOR 2SC4081-R
Q428	8-729-905-XX	TRANSISTOR DTC114TU
Q429	8-729-905-35	TRANSISTOR 2SC4081-R
Q430	8-729-905-18	TRANSISTOR DTC144EU
Q431	8-729-905-23	TRANSISTOR 2SA1576-R
Q432	8-729-905-23	TRANSISTOR 2SA1576-R
Q433	8-729-905-35	TRANSISTOR 2SC4081-R
Q434	8-729-905-23	TRANSISTOR 2SA1576-R
Q439	8-729-905-12	TRANSISTOR DTA144EU
Q440	8-729-905-35	TRANSISTOR 2SC4081-R
Q442	8-729-905-18	TRANSISTOR DTC144EU
Q443	8-729-905-18	TRANSISTOR DTC144EU
Q444	8-729-905-35	TRANSISTOR 2SC4081-R
Q446	8-729-905-35	TRANSISTOR 2SC4081-R
Q447	8-729-905-12	TRANSISTOR DTA144EU
Q448	8-729-905-18	TRANSISTOR DTC144EU
Q452	8-729-905-18	TRANSISTOR DTC144EU
Q456	8-729-905-18	TRANSISTOR DTC144EU
Q469	8-729-905-18	TRANSISTOR DTC144EU
Q490	8-729-905-35	TRANSISTOR 2SC4081-R
Q491	8-729-905-12	TRANSISTOR DTA144EU
Q493	8-729-905-12	TRANSISTOR DTA144EU
Q494	8-729-905-35	TRANSISTOR 2SC4081-R
Q496	8-729-905-35	TRANSISTOR 2SC4081-R
Q497	8-729-905-18	TRANSISTOR DTC144EU
Q498	8-729-905-18	TRANSISTOR DTC144EU
Q551	8-729-905-23	TRANSISTOR 2SA1576-R
Q552	8-729-905-23	TRANSISTOR 2SA1576-R
Q553	8-729-905-35	TRANSISTOR 2SC4081-R
Q554	8-729-905-35	TRANSISTOR 2SC4081-R
Q555	8-729-905-35	TRANSISTOR 2SC4081-R
Q556	8-729-905-35	TRANSISTOR 2SC4081-R
Q557	8-729-905-18	TRANSISTOR DTC144EU
Q558	8-729-905-12	TRANSISTOR DTA144EU
Q559	8-729-905-23	TRANSISTOR 2SA1576-R
Q560	8-729-905-18	TRANSISTOR DTC144EU
Q561	8-729-907-26	TRANSISTOR IMX1
Q562	8-729-904-07	TRANSISTOR FMG2
Q603	8-729-905-35	TRANSISTOR 2SC4081-R
Q606	8-729-902-93	TRANSISTOR FMG4
Q607	8-729-922-94	TRANSISTOR DTC143TU
Q608	8-729-905-23	TRANSISTOR 2SA1576-R
Q643	8-729-905-23	TRANSISTOR 2SA1576-R
Q645	8-729-905-18	TRANSISTOR DTC144EU
Q647	8-729-905-18	TRANSISTOR DTC144EU
Q648	8-729-905-12	TRANSISTOR DTA144EU
Q649	8-729-905-18	TRANSISTOR DTC144EU
Q653	8-729-905-18	TRANSISTOR DTC144EU
Q655	8-729-905-12	TRANSISTOR DTA144EU
Q657	8-729-905-35	TRANSISTOR 2SC4081-R
Q658	8-729-905-35	TRANSISTOR 2SC4081-R
Q659	8-729-905-35	TRANSISTOR 2SC4081-R
Q660	8-729-905-35	TRANSISTOR 2SC4081-R
Q661	8-729-905-12	TRANSISTOR DTA144EU
Q662	8-729-905-12	TRANSISTOR DTA144EU
Q665	8-729-905-45	TRANSISTOR DTA143EU
Q666	8-729-905-23	TRANSISTOR 2SA1576-R
Q667	8-729-905-18	TRANSISTOR DTC144EU
Q668	8-729-905-35	TRANSISTOR 2SC4081-R
Q669	8-729-905-12	TRANSISTOR DTA144EU
Q670	8-729-903-10	TRANSISTOR FMW1
Q671	8-729-905-23	TRANSISTOR 2SA1576-R
Q672	8-729-905-18	TRANSISTOR DTC144EU
Q673	8-729-905-12	TRANSISTOR DTA144EU
Q674	8-729-141-48	TRANSISTOR 2SB624-BV345
Q675	8-729-905-18	TRANSISTOR DTC144EU
Q676	8-729-905-12	TRANSISTOR DTA144EU
Q677	8-729-905-12	TRANSISTOR DTA144EU
Q678	8-729-202-38	TRANSISTOR 2SC3326N
Q679	8-729-202-38	TRANSISTOR 2SC3326N
Q680		
Q681		
Q683		
Q684		
Q685		
Q686		
Q687		
Q688		
Q689		
Q690		
Q691		
Q692		
Q693		
Q694		
Q695		
Q696		
Q697		
Q698		
Q700		
Q701		
Q702		
Q703		

VA-62 (Y/CHROMA SIGNAL PROCESS, AUDIO SIGNAL PROCESS) PRINTED WIRING BOARD

—Ref. No. VA-62 BOARD : 1000 series—

VA-62 BOARD (COMPONENT SIDE)



144EU
4081-R
4081-R
144EU
144EU
144EU
144EU
144EU
4081-R
144EU
144EU
4081-R
4081-R
144EU
144EU
1576-R
1576-R
4081-R

Q554	8-729-905-35	TRANSISTOR 2SC4081-R
Q555	8-729-905-35	TRANSISTOR 2SC4081-R
Q556	8-729-905-35	TRANSISTOR 2SC4081-R
Q557	8-729-905-18	TRANSISTOR DTC144EU
Q558	8-729-905-12	TRANSISTOR DTA144EU
Q559	8-729-905-23	TRANSISTOR 2SA1576-R
Q560	8-729-905-18	TRANSISTOR DTC144EU
Q561	8-729-907-26	TRANSISTOR IMX1
Q562	8-729-904-07	TRANSISTOR FMG2
Q603	8-729-905-35	TRANSISTOR 2SC4081-R
Q606	8-729-902-93	TRANSISTOR FMG4
Q607	8-729-922-94	TRANSISTOR DTC143TU
Q608	8-729-905-23	TRANSISTOR 2SA1576-R
Q643	8-729-905-23	TRANSISTOR 2SA1576-R
Q645	8-729-905-18	TRANSISTOR DTC144EU
Q647	8-729-905-18	TRANSISTOR DTC144EU
Q648	8-729-905-12	TRANSISTOR DTA144EU
Q649	8-729-905-18	TRANSISTOR DTC144EU
Q653	8-729-905-18	TRANSISTOR DTC144EU
Q655	8-729-905-12	TRANSISTOR DTA144EU
Q657	8-729-905-35	TRANSISTOR 2SC4081-R
Q658	8-729-905-35	TRANSISTOR 2SC4081-R
Q659	8-729-905-35	TRANSISTOR 2SC4081-R
Q660	8-729-905-35	TRANSISTOR 2SC4081-R
Q661	8-729-905-12	TRANSISTOR DTA144EU
Q662	8-729-905-12	TRANSISTOR DTA144EU
Q665	8-729-905-45	TRANSISTOR DTA143EU
Q666	8-729-905-23	TRANSISTOR 2SA1576-R
Q667	8-729-905-18	TRANSISTOR DTC144EU
Q668	8-729-905-35	TRANSISTOR 2SC4081-R
Q669	8-729-905-12	TRANSISTOR DTA144EU
Q670	8-729-903-10	TRANSISTOR FMW1
Q671	8-729-905-23	TRANSISTOR 2SA1576-R
Q672	8-729-905-18	TRANSISTOR DTC144EU
Q673	8-729-905-12	TRANSISTOR DTA144EU
Q674	8-729-141-48	TRANSISTOR 2SB624-BV345
Q675	8-729-905-18	TRANSISTOR DTC144EU
Q676	8-729-905-12	TRANSISTOR DTA144EU
Q677	8-729-905-12	TRANSISTOR DTA144EU
Q678	8-729-202-38	TRANSISTOR 2SC3326N
Q679	8-729-202-38	TRANSISTOR 2SC3326N
Q680	8-729-905-35	TRANSISTOR 2SC4081-R
Q681	8-729-905-35	TRANSISTOR 2SC4081-R
Q683	8-729-905-23	TRANSISTOR 2SA1576-R
Q684	8-729-905-18	TRANSISTOR DTC144EU
Q685	8-729-905-12	TRANSISTOR DTA144EU
Q686	8-729-905-35	TRANSISTOR 2SC4081-R
Q687	8-729-905-35	TRANSISTOR 2SC4081-R
Q688	8-729-905-35	TRANSISTOR 2SC4081-R
Q689	8-729-905-35	TRANSISTOR 2SC4081-R
Q690	8-729-141-48	TRANSISTOR 2SB624-BV345
Q691	8-729-905-18	TRANSISTOR DTC144EU
Q692	8-729-905-18	TRANSISTOR DTC144EU
Q693	8-729-905-35	TRANSISTOR 2SC4081-R
Q694	8-729-905-35	TRANSISTOR 2SC4081-R
Q695	8-729-905-12	TRANSISTOR DTA144EU
Q696	8-729-905-18	TRANSISTOR DTC144EU
Q697	8-729-905-12	TRANSISTOR DTA144EU
Q698	8-729-903-10	TRANSISTOR FMW1
Q700	8-729-202-38	TRANSISTOR 2SC3326N
Q701	8-729-905-35	TRANSISTOR 2SC4081-R
Q702	8-729-905-35	TRANSISTOR 2SC4081-R
Q703	8-729-903-10	TRANSISTOR FMW1
Q705	8-729-905-12	TRANSISTOR DTA144EU
Q707	8-729-904-20	TRANSISTOR FMA2
Q708	8-729-904-07	TRANSISTOR FMG2
Q711	8-729-905-12	TRANSISTOR DTA144EU
Q712	8-729-905-12	TRANSISTOR DTA144EU
Q717	8-729-905-23	TRANSISTOR 2SA1576-R
Q719	8-729-905-18	TRANSISTOR DTC144EU
Q721	8-729-202-38	TRANSISTOR 2SC3326N
Q722	8-729-905-35	TRANSISTOR 2SC4081-R
Q723	8-729-904-07	TRANSISTOR FMG2
Q724	8-729-905-23	TRANSISTOR 2SA1576-R
Q725	8-729-905-23	TRANSISTOR 2SA1576-R
Q727	8-729-905-45	TRANSISTOR DTA143EU
Q728	8-729-905-23	TRANSISTOR 2SA1576-R
Q729	8-729-905-35	TRANSISTOR 2SC4081-R
Q730	8-729-905-23	TRANSISTOR 2SA1576-R
Q731	8-729-905-12	TRANSISTOR DTA144EU
Q732	8-729-905-35	TRANSISTOR 2SC4081-R
Q733	8-729-905-18	TRANSISTOR DTC144EU
Q734	8-729-905-18	TRANSISTOR DTC144EU
Q735	8-729-905-35	TRANSISTOR 2SC4081-R
Q736	8-729-905-45	TRANSISTOR DTA143EU

CESS, AUDIO SIGNAL PROCESS) PRINTED WIRING BOARD

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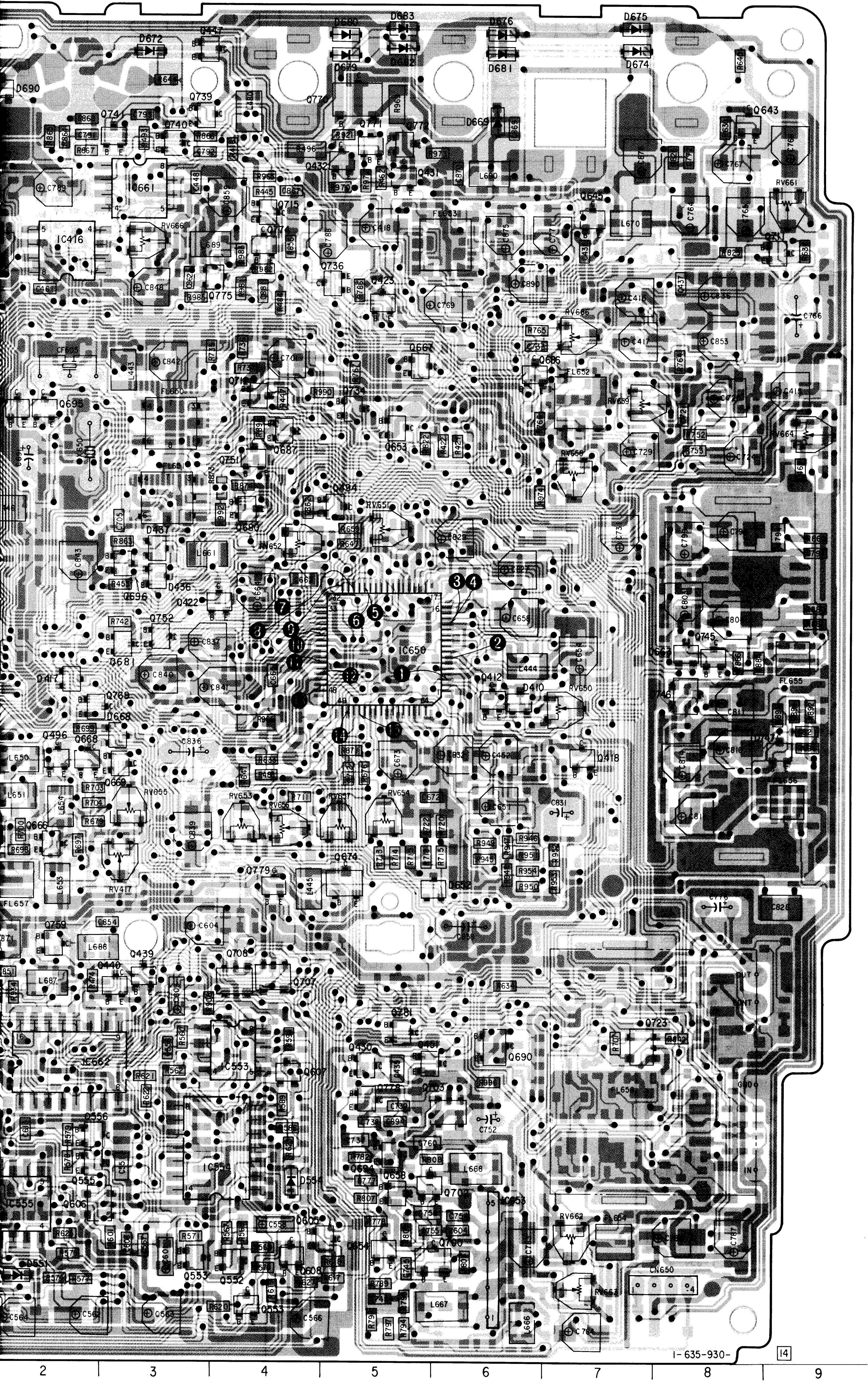
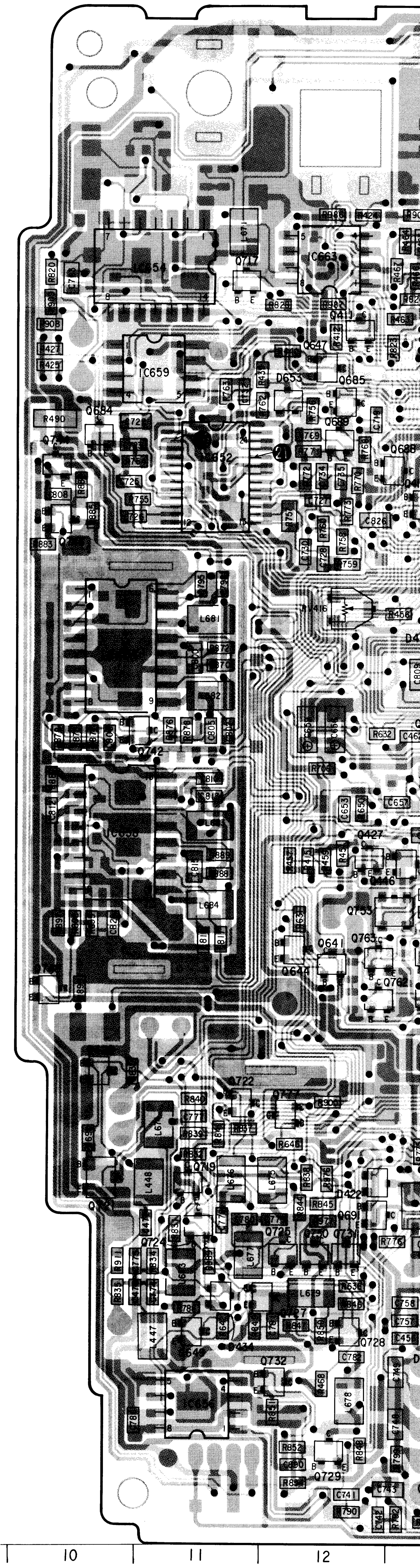
COMPONENT SIDE)



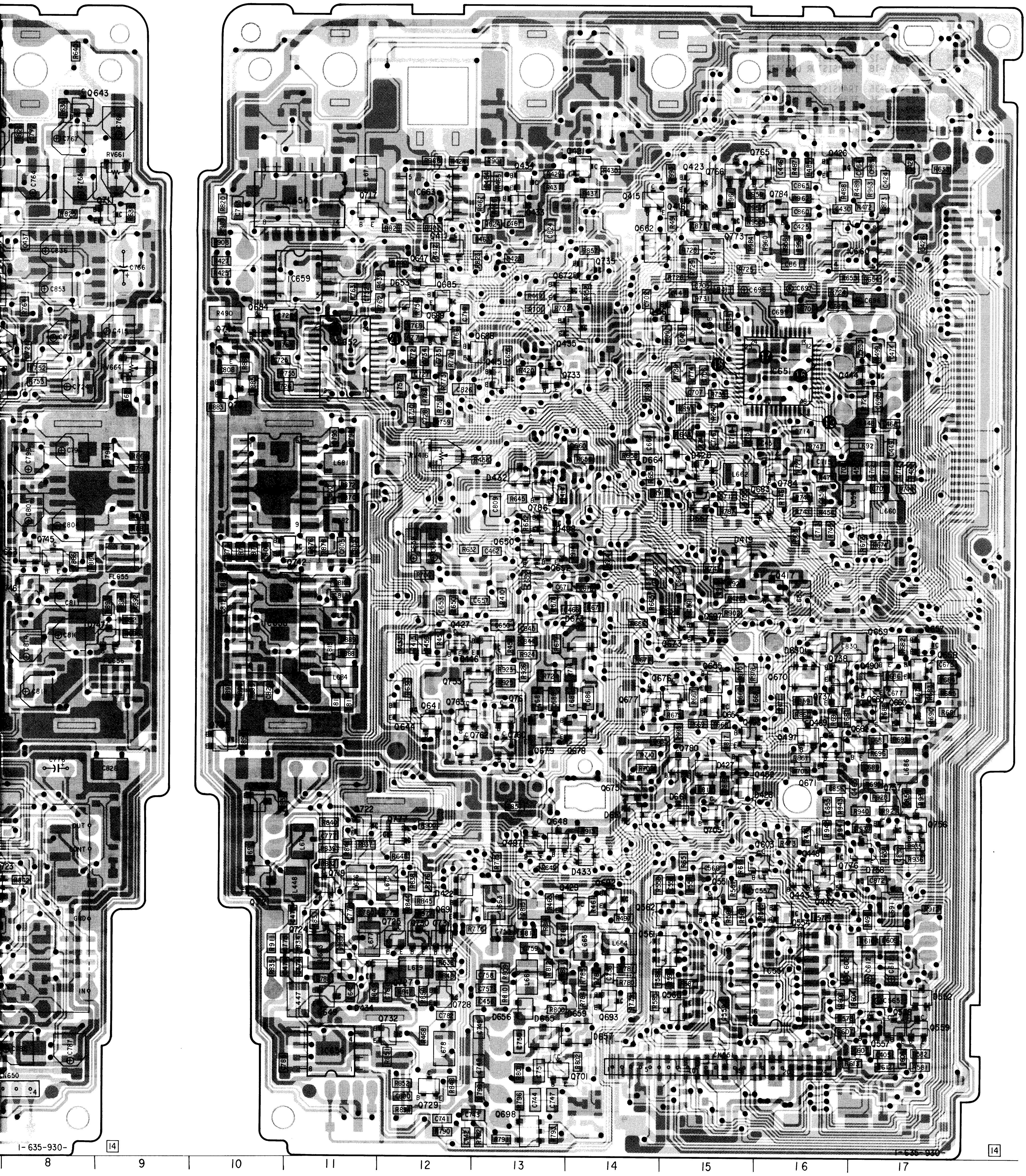
VA-62 BOARD (CONDUCTOR SIDE)



2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12

Q680	8-729-905-35	TRANSISTOR 2SC4081-R
Q681	8-729-905-35	TRANSISTOR 2SC4081-R
Q683	8-729-905-23	TRANSISTOR 2SA1576-R
Q684	8-729-905-18	TRANSISTOR DTC144EU
Q685	8-729-905-12	TRANSISTOR DTA144EU
Q686	8-729-905-35	TRANSISTOR 2SC4081-R
Q687	8-729-905-35	TRANSISTOR 2SC4081-R
Q688	8-729-905-35	TRANSISTOR 2SC4081-R
Q689	8-729-905-35	TRANSISTOR 2SC4081-R
Q690	8-729-141-48	TRANSISTOR 2SB624-BV345
Q691	8-729-905-18	TRANSISTOR DTC144EU
Q692	8-729-905-18	TRANSISTOR DTC144EU
Q693	8-729-905-35	TRANSISTOR 2SC4081-R
Q694	8-729-905-35	TRANSISTOR 2SC4081-R
Q695	8-729-905-12	TRANSISTOR DTA144EU
Q696	8-729-905-18	TRANSISTOR DTC144EU
Q697	8-729-905-12	TRANSISTOR DTA144EU
Q698	8-729-903-10	TRANSISTOR FMW1
Q700	8-729-202-38	TRANSISTOR 2SC3326N
Q701	8-729-905-35	TRANSISTOR 2SC4081-R
Q702	8-729-905-35	TRANSISTOR 2SC4081-R
Q703	8-729-903-10	TRANSISTOR FMW1
Q705	8-729-905-12	TRANSISTOR DTA144EU
Q707	8-729-904-20	TRANSISTOR FMA2
Q708	8-729-904-07	TRANSISTOR FMG2
Q711	8-729-905-12	TRANSISTOR DTA144EU
Q712	8-729-905-12	TRANSISTOR DTA144EU
Q717	8-729-905-23	TRANSISTOR 2SA1576-R
Q719	8-729-905-18	TRANSISTOR DTC144EU
Q721	8-729-202-38	TRANSISTOR 2SC3326N
Q722	8-729-905-35	TRANSISTOR 2SC4081-R
Q723	8-729-904-07	TRANSISTOR FMG2
Q724	8-729-905-23	TRANSISTOR 2SA1576-R
Q725	8-729-905-23	TRANSISTOR 2SA1576-R
Q727	8-729-905-45	TRANSISTOR DTA143EU
Q728	8-729-905-23	TRANSISTOR 2SA1576-R
Q729	8-729-905-35	TRANSISTOR 2SC4081-R
Q730	8-729-905-23	TRANSISTOR 2SA1576-R
Q731	8-729-905-12	TRANSISTOR DTA144EU
Q732	8-729-905-35	TRANSISTOR 2SC4081-R
Q733	8-729-905-18	TRANSISTOR DTC144EU
Q734	8-729-905-18	TRANSISTOR DTC144EU
Q735	8-729-905-35	TRANSISTOR 2SC4081-R
Q736	8-729-905-45	TRANSISTOR DTA143EU
Q737	8-729-905-35	TRANSISTOR 2SC4081-R
Q738	8-729-905-35	TRANSISTOR 2SC4081-R
Q742	8-729-905-23	TRANSISTOR 2SA1576-R
Q743	8-729-905-35	TRANSISTOR 2SC4081-R
Q744	8-729-905-35	TRANSISTOR 2SC4081-R
Q745	8-729-905-18	TRANSISTOR DTC144EU
Q746	8-729-141-48	TRANSISTOR 2SB624-BV345
Q747	8-729-905-23	TRANSISTOR 2SA1576-R
Q748	8-729-905-35	TRANSISTOR 2SC4081-R
Q751	8-729-905-35	TRANSISTOR 2SC4081-R
Q752	8-729-905-23	TRANSISTOR 2SA1576-R
Q753	8-729-904-20	TRANSISTOR FMA2
Q756	8-729-905-18	TRANSISTOR DTC144EU
Q757	8-729-905-35	TRANSISTOR 2SC4081-R
Q758	8-729-905-23	TRANSISTOR 2SA1576-R
Q759	8-729-905-35	TRANSISTOR 2SC4081-R
Q760	8-729-905-12	TRANSISTOR DTA144EU
Q761	8-729-905-18	TRANSISTOR DTC144EU
Q762	8-729-905-18	TRANSISTOR DTC144EU
Q763	8-729-905-18	TRANSISTOR DTC144EU
Q764	8-729-905-35	TRANSISTOR 2SC4081-R
Q765	8-729-905-35	TRANSISTOR 2SC4081-R
Q766	8-729-905-23	TRANSISTOR 2SA1576-R
Q770	8-729-101-07	TRANSISTOR 2SB798-DL
Q772	8-729-905-12	TRANSISTOR DTA144EU
Q773	8-729-905-12	TRANSISTOR DTA144EU
Q774	8-729-905-35	TRANSISTOR 2SC4081-R
Q775	8-729-905-18	TRANSISTOR DTC144EU
Q776	8-729-905-12	TRANSISTOR DTA144EU
Q777	8-729-905-23	TRANSISTOR 2SA1576-R
Q784	8-729-905-35	TRANSISTOR 2SC4081-R
Q786	8-729-905-18	TRANSISTOR DTC144EU

VA-62 BOARD (CONDUCTOR SIDE)



DIODE

D401	8-719-404-46	DIODE MA110

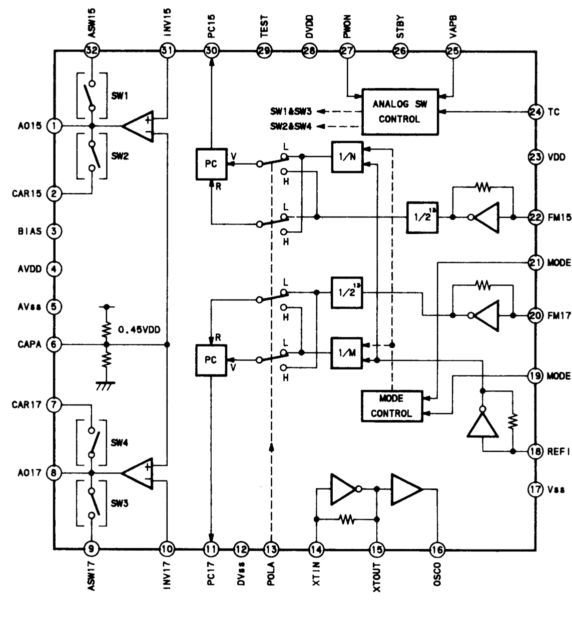
IC

HIC401	8-741-100-98	IC SBX1506-21
IC401	8-752-334-42	IC CXD2106Q
IC402	8-759-009-22	IC MC14094BF

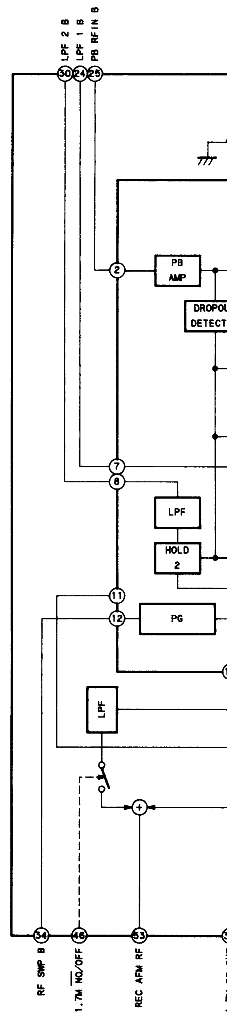
TRANSISTOR

Q401	8-729-921-58	TRANSISTOR DTA144TU
Q405	8-729-905-18	TRANSISTOR DTC144EU
Q406	8-729-905-12	TRANSISTOR DTA144EU
Q407	8-729-905-18	TRANSISTOR DTC144EU
Q409	8-729-905-35	TRANSISTOR 2SC4081-R
Q410	8-729-905-35	TRANSISTOR 2SC4081-R
Q411	8-729-905-23	TRANSISTOR 2SA1576-R
Q413	8-729-905-35	TRANSISTOR 2SC4081-R
Q414	8-729-905-35	TRANSISTOR 2SC4081-R
Q415	8-729-903-10	TRANSISTOR FMW1
Q416	8-729-905-35	TRANSISTOR 2SC4081-R
Q417	8-729-905-23	TRANSISTOR 2SA1576-R
Q421	8-729-905-35	TRANSISTOR 2SC4081-R
Q426	8-729-905-12	TRANSISTOR DTA144EU
Q427	8-729-905-18	TRANSISTOR DTC144EU
Q433	8-729-905-35	TRANSISTOR 2SC4081-R
Q434	8-729-905-35	TRANSISTOR 2SC4081-R
Q436	8-729-905-12	TRANSISTOR DTA144EU
Q437	8-729-905-35	TRANSISTOR 2SC4081-R
Q440	8-729-905-18	TRANSISTOR DTC144EU
Q441	8-729-905-18	TRANSISTOR DTC144EU
Q501	8-729-905-35	TRANSISTOR 2SC4081-R
Q502	8-729-905-35	TRANSISTOR 2SC4081-R

AU-60P BOARD IC401 CXD2106Q

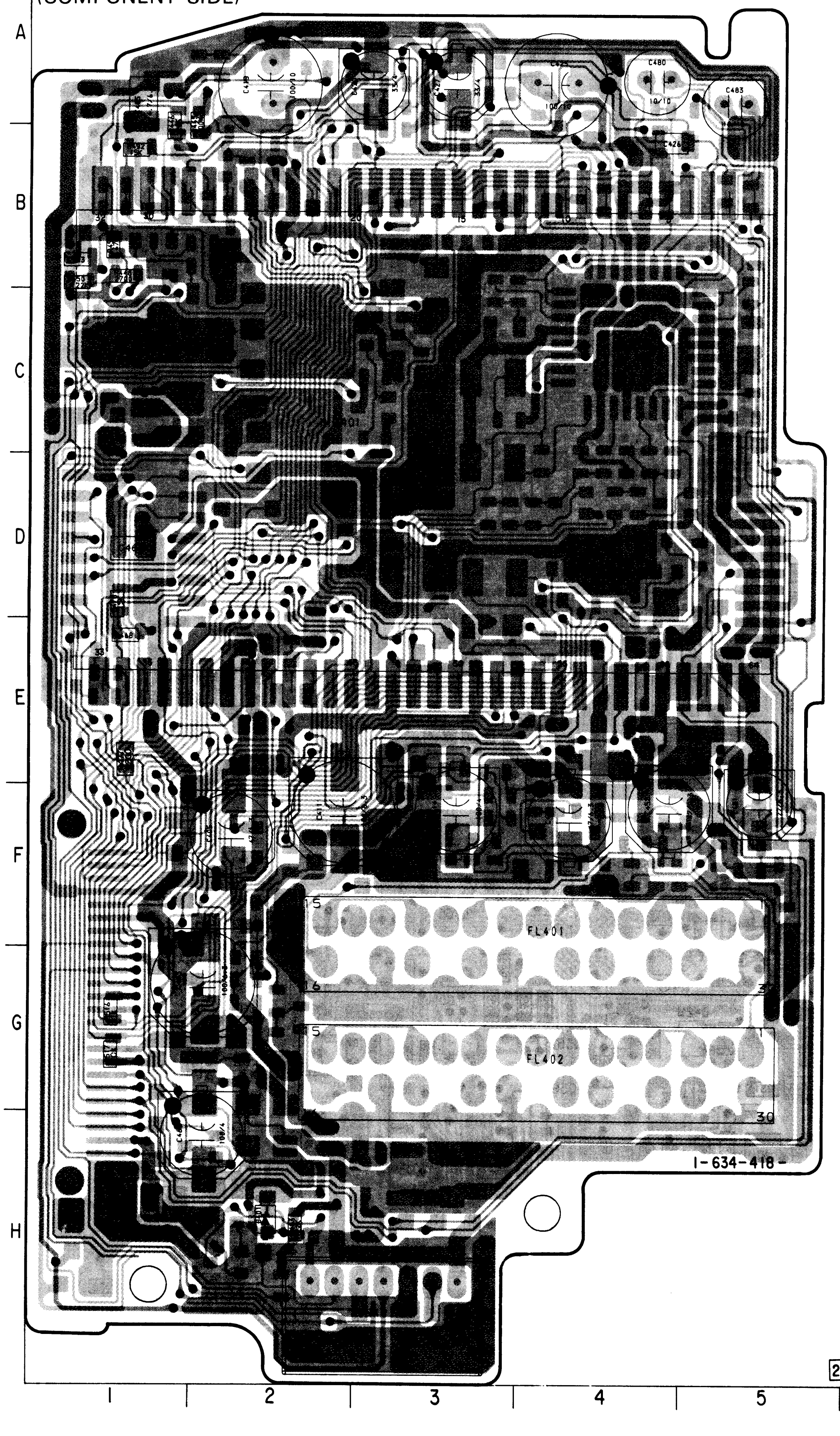

ASW15
INV15
PC15
TEST
DVDD
PWON
STBY
VAPB
AO15
CAR15
BIAS
AVDD
AVss
CAPA
CAR17
AO17
SW1
SW2
SW3
SW4
SW1&SW3
SW2&SW4
ANALOG SW CONTROL
PC
1/N
1/2
1/M
MODE CONTROL
0.45VDD
TC
VDD
FM15
MODE1
FM17
MODEφ
REFIN
Vss
ASW17
INV17
PC17
DVss
POLA
XTIN
XTOUT
OSCO

AU-60P BOARD HIC40

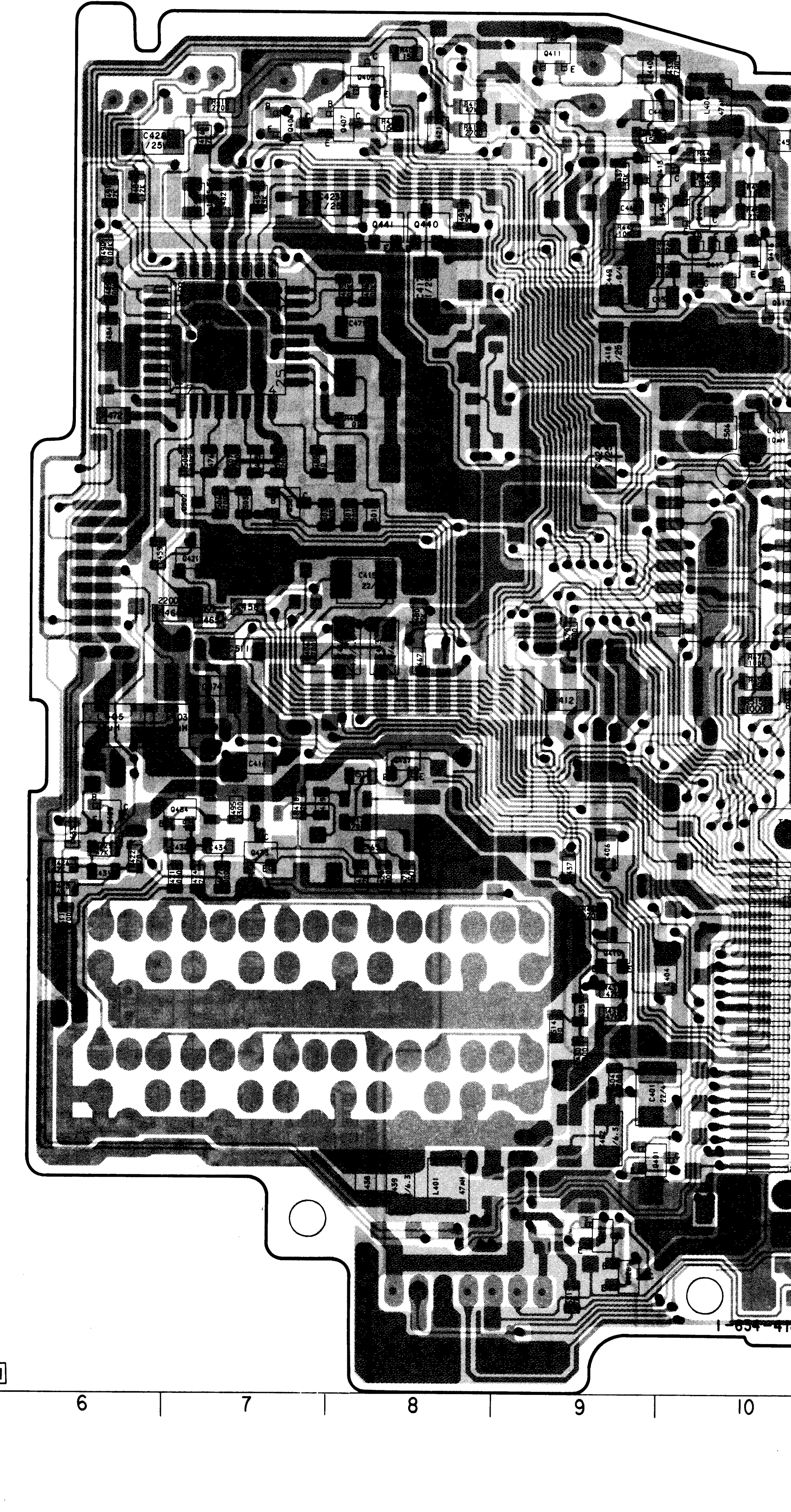

LPF 2 B
LPF 1 B
PB RF IN B
PB AMP
DROPOUT DETECT
LPF
HOLD 2
PG
LPF
RF SMP B
1.7M NO/OFF
REC AFM RF

AU-60P (ATF/AFM PROCESS), MC-43P (MIC AMP), MJ-41P (HEADPHONE/MIC PLUG IN POWER JACK) PRINTED WIRING BOARD
—Ref. No. AU-60P, MC-43P, MJ-41P BOARDS : 6000 series—

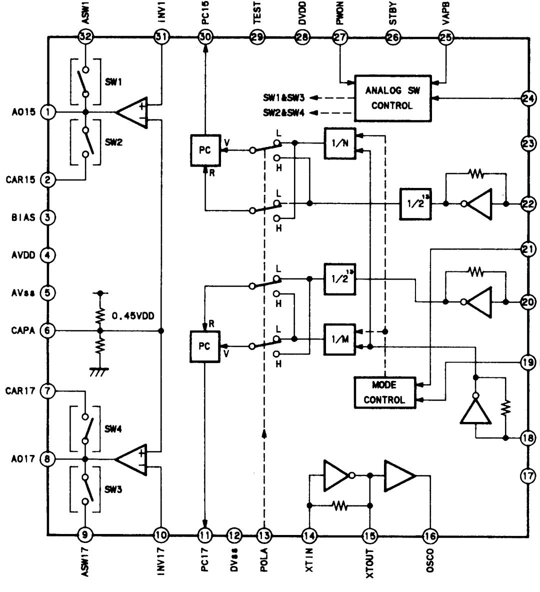
AU-60P BOARD
(COMPONENT SIDE)


A
B
C
D
E
F
G
H
1
2
3
4
5
FL401
FL402
1-634-418-

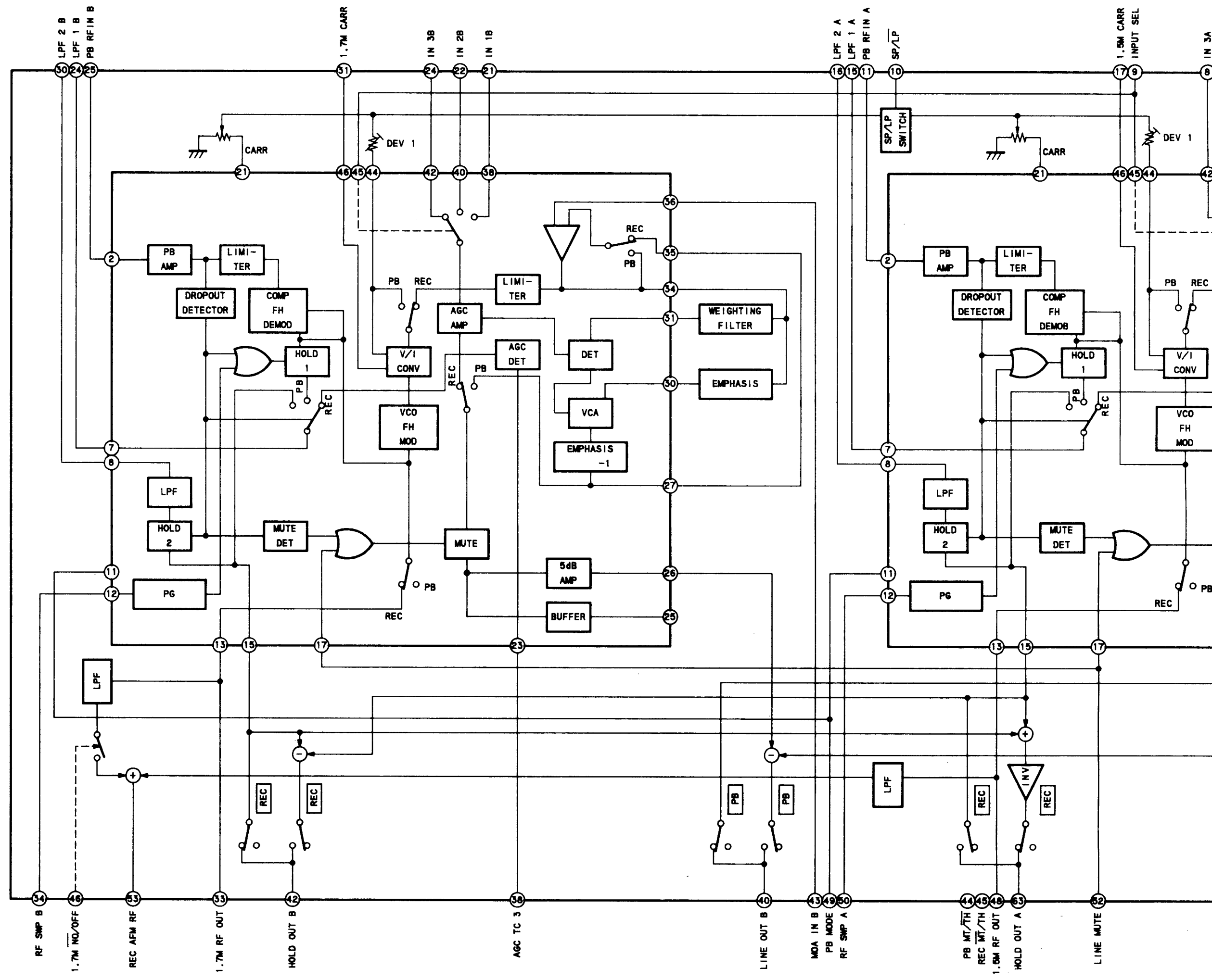
AU-60P BOARD
(CONDUCTOR SIDE)


21
6
7
8
9
10
Q411
Q441
Q440

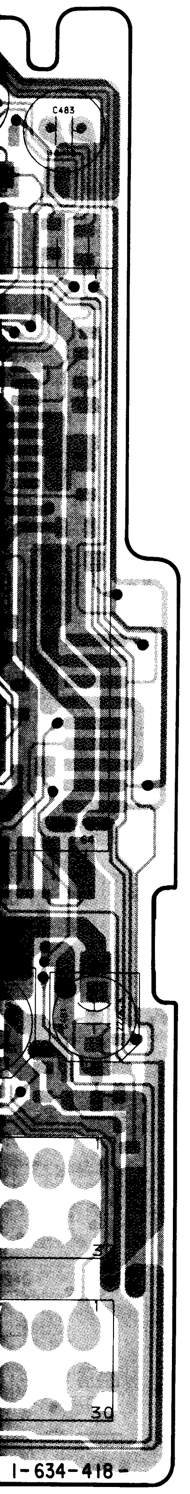
AU-60P BOARD IC401 CXD2106Q


ASW15
INV15
PC15
TEST
DVDD
PWON
STBY
VAPB
AO15
CAR15
BIAS
AVDD
AVss
CAPA
CAR17
AO17
SW1
SW2
SW3
SW4
0.45VDD
ANALOG SW CONTROL
SW1&SW3
SW2&SW4
PC
1/N
1/2
1/M
MODE CONTROL
TC
VDD
FM15
MODE1
FM17
MODEφ
REFIN
Vss
ASW17
INV17
PC17
DVss
POLA
XTIN
XTOUT
OSCO

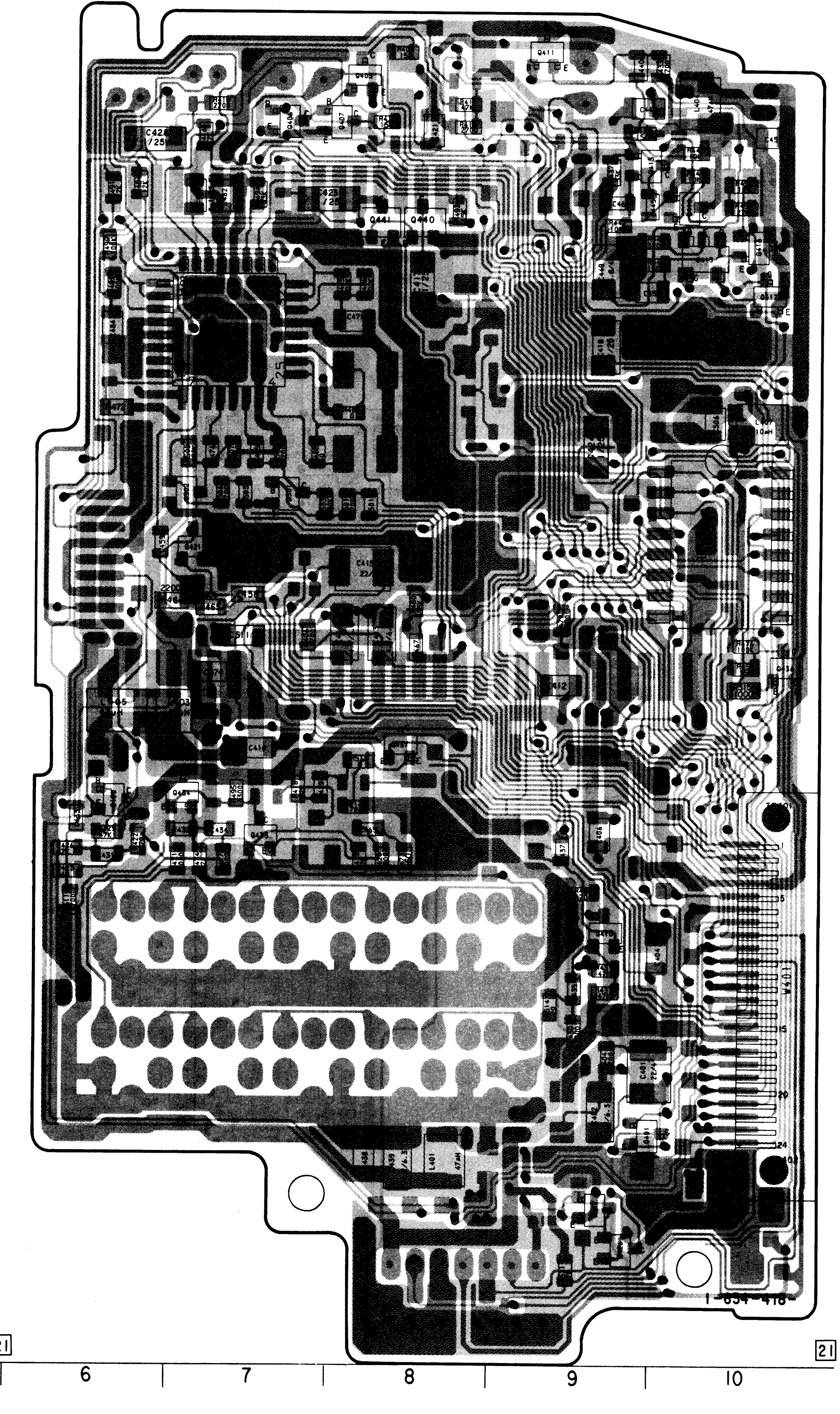
AU-60P BOARD HIC401 SBX1506-21


LPF 2 B
LPF 1 B
PB RFIN B
1.7M CARR
IN 3B
IN 2B
IN 1B
LPF 2 A
LPF 1 A
PB RFIN A
SP/LP
1.5M CARR INPUT SEL
CARR
DEV 1
SP/LP SWITCH
PB AMP
LIMITER
DROPOUT DETECTOR
COMP FH DEMOD
HOLD 1
V/I CONV
AGC AMP
AGC DET
VCO FH MOD
DET
VCA
EMPHASIS -1
WEIGHTING FILTER
EMPHASIS
LPF
HOLD 2
MUTE DET
MUTE
5dB AMP
BUFFER
PG
REC
PB
INV
RF SWP B
1.7M NO/OFF
REC AFM RF
1.7M RF OUT
HOLD OUT B
AGC TC 3
LINE OUT B
MOA IN B
PB MODE
RF SWP A
PB MT/TH
REC MT/TH
1.5M RF OUT
HOLD OUT A
LINE MUTE

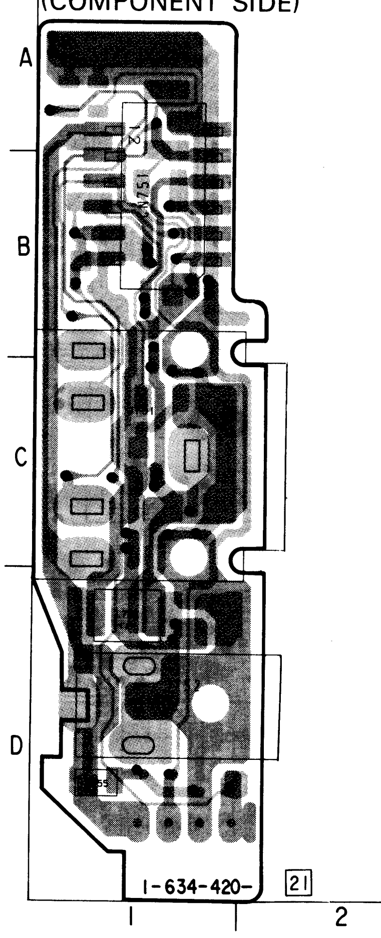
HONE/MIC PLUG IN POWER JACK) PRINTED WIRING BOARD


C483
30
1-634-418-

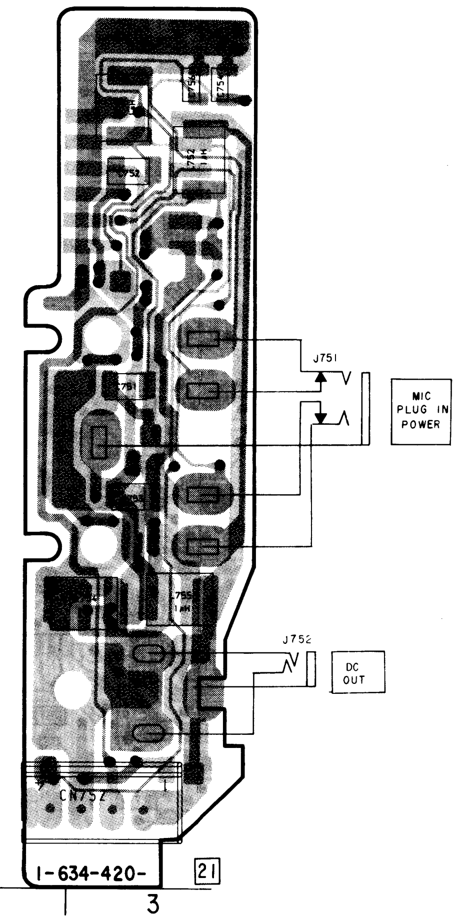
AU-60P BOARD
(CONDUCTOR SIDE)


Q411
Q407
C424
Q441
Q440
C415
V401
L401
1-634-418
21
5
6
7
8
9
10

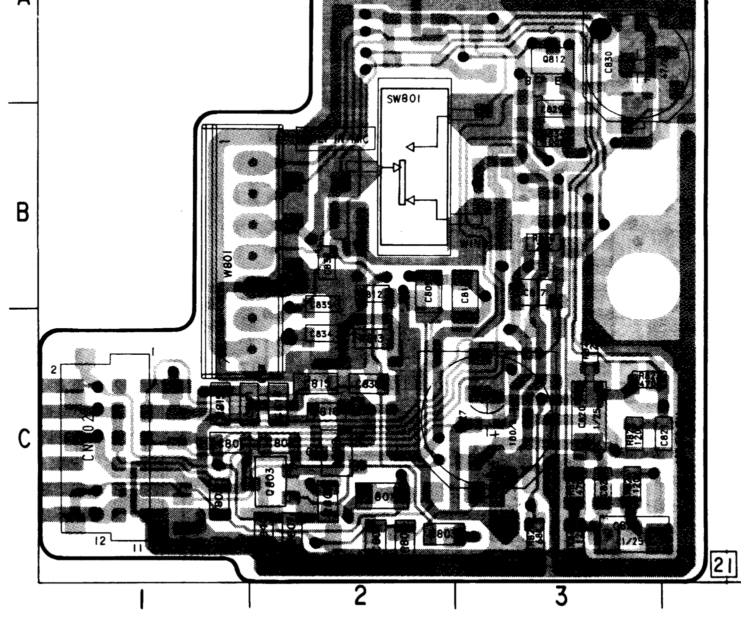
MJ-40P BOARD
(COMPONENT SIDE)


A
B
C
D
1-634-420-
21
1
2

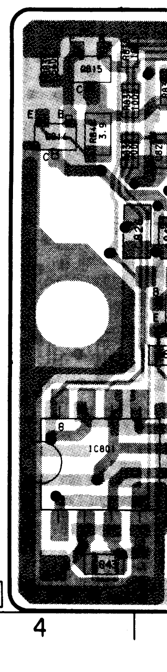
MJ-40P BOARD
(CONDUCTOR SIDE)

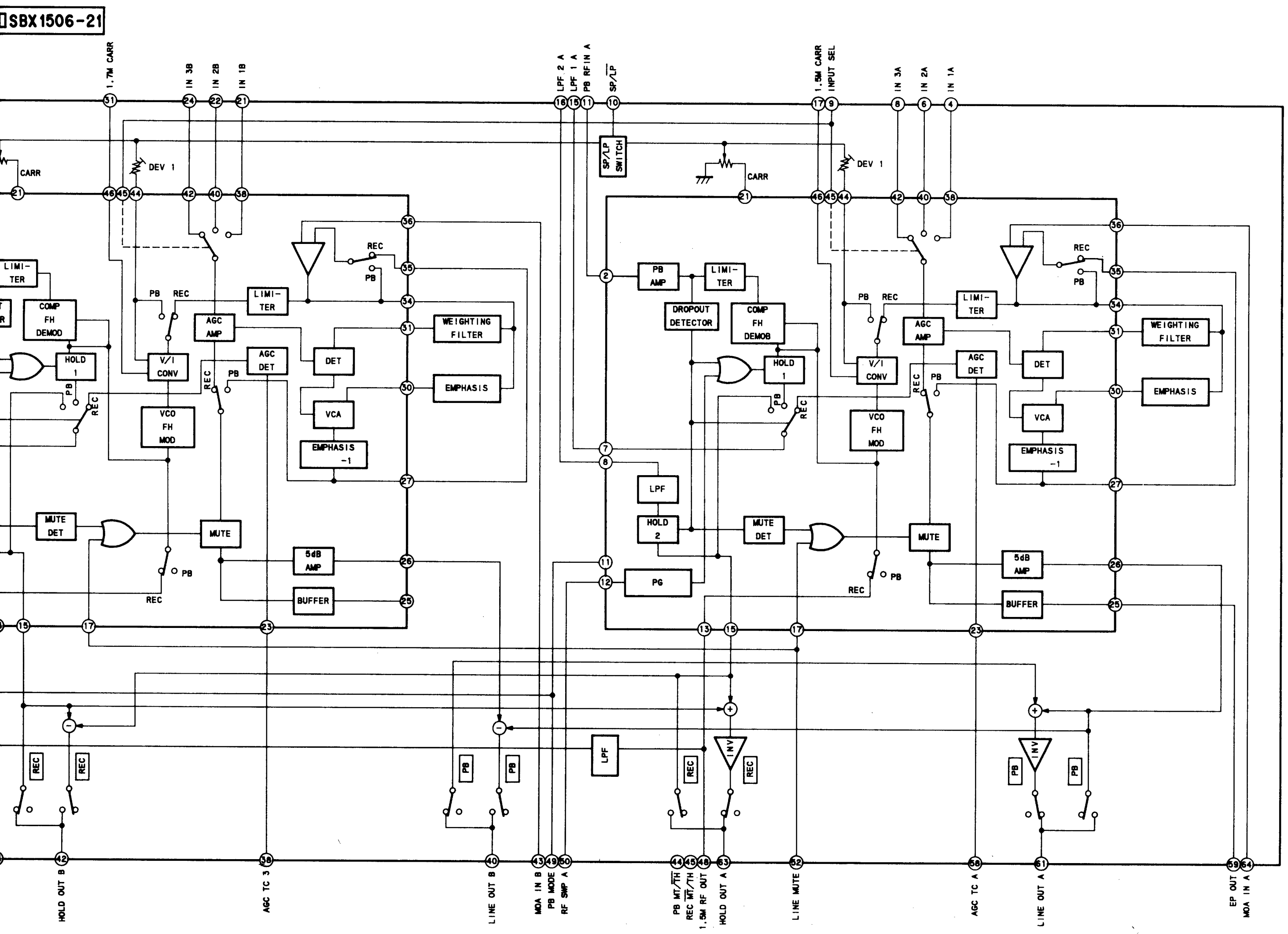

J751
MIC PLUG IN POWER
J752
DC OUT
CN752
1-634-420-
21
3

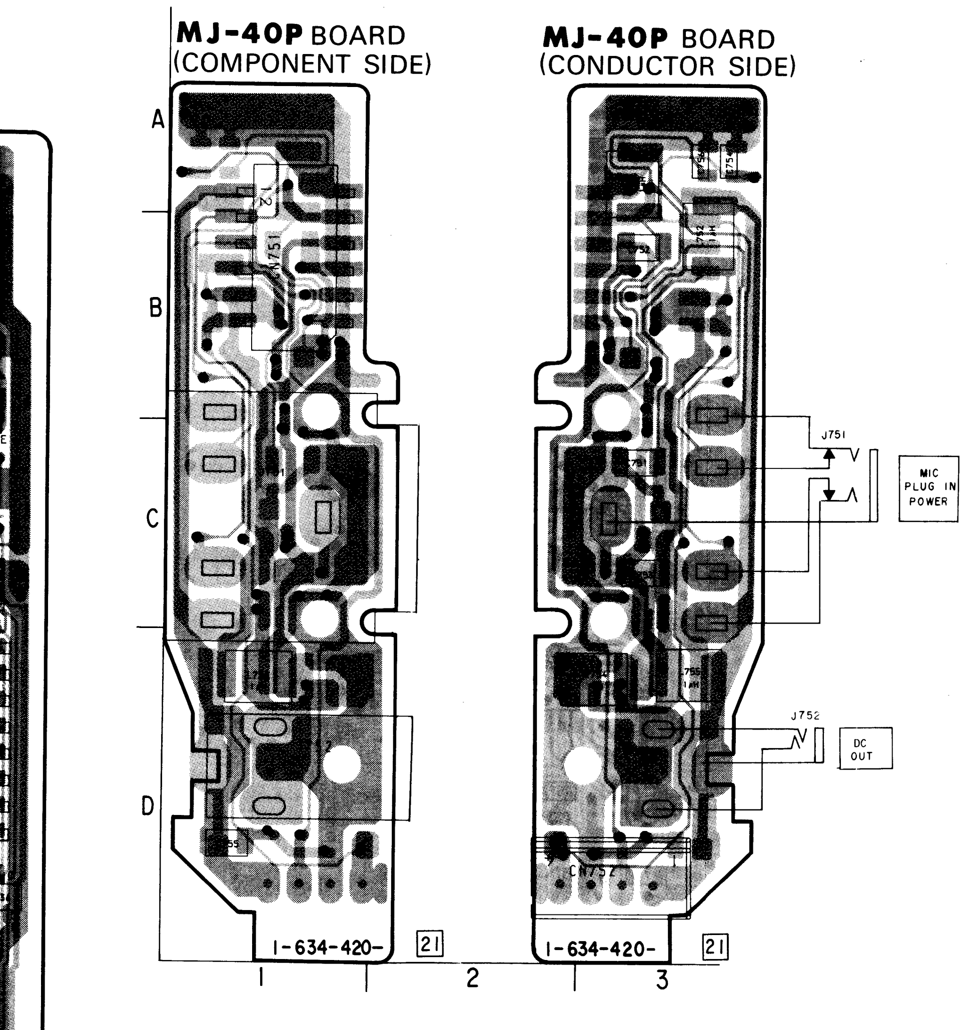
MC-43P BOARD
(COMPONENT SIDE)

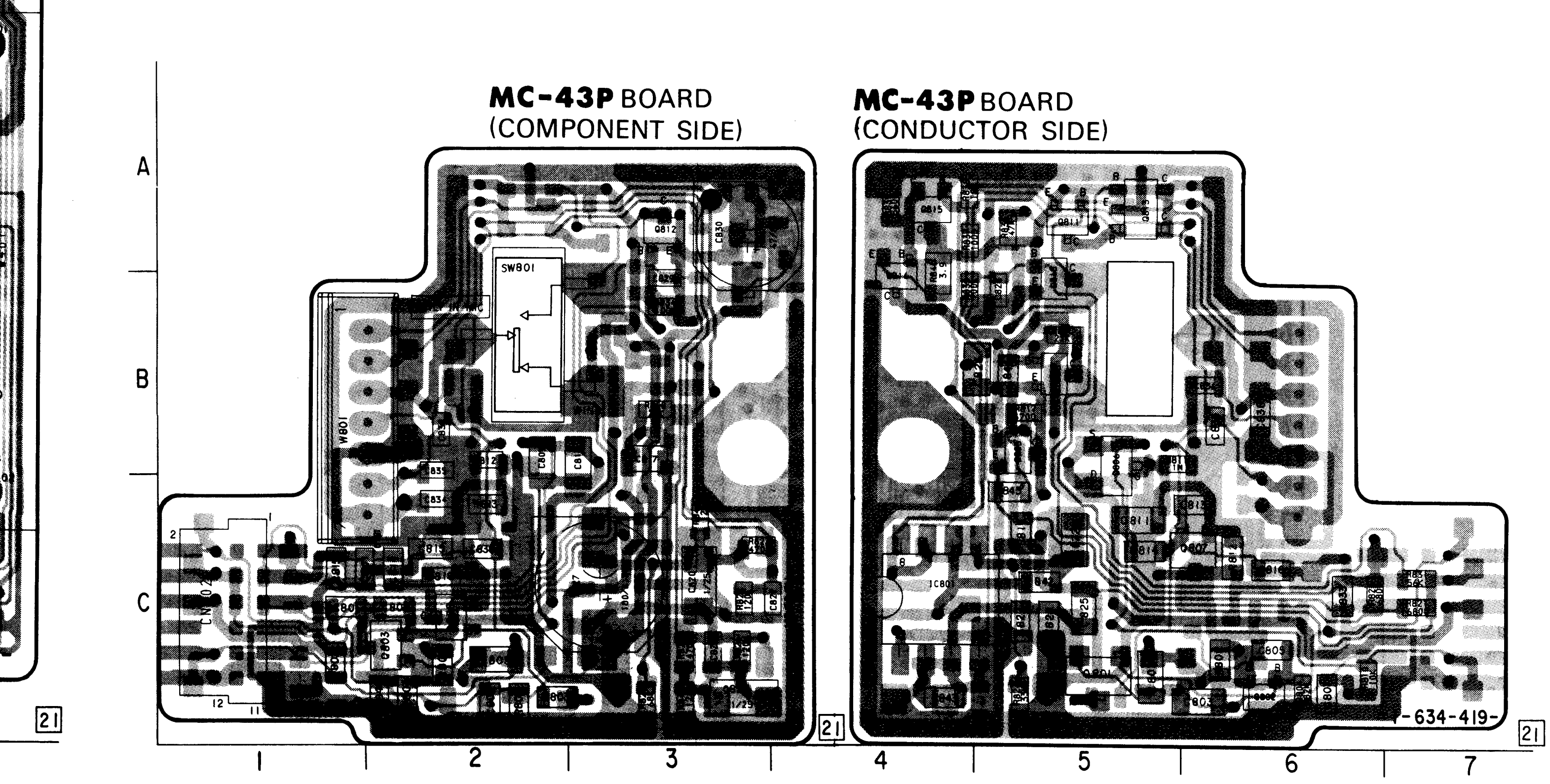

A
B
C
SW801
CN801
21
1
2
3

MC-43P BO
(CONDUCTO




SBX1506-21
1.7M CARR
IN 3B
IN 2B
IN 1B
LPF 2 A
LPF 1 A
PB RF IN A
SP/LP
1.5M CARR
INPUT SEL
IN 3A
IN 2A
IN 1A
CARR
DEV 1
SP/LP SWITCH
LIMI-TER
COMP FH DEMOD
HOLD 1
V/I CONV
VCO FH MOD
AGC AMP
AGC DET
DET
VCA
EMPHASIS -1
WEIGHTING FILTER
EMPHASIS
PB AMP
DROPOUT DETECTOR
LPF
HOLD 2
PG
MUTE DET
MUTE
5dB AMP
BUFFER
INV
REC
PB
HOLD OUT B
AGC TC 3
LINE OUT B
MOA IN B
PB MODE
RF SWP A
PB MT/TH
REC MT/TH
1.5M RF OUT
HOLD OUT A
LINE MUTE
AGC TC A
LINE OUT A
EP OUT
MOA IN A


MJ-40P BOARD
(COMPONENT SIDE)
MJ-40P BOARD
(CONDUCTOR SIDE)
A
B
C
D
CN751
J751
MIC PLUG IN POWER
J752
DC OUT
CN752
1-634-420-
21
1
2
3


MC-43P BOARD
(COMPONENT SIDE)
MC-43P BOARD
(CONDUCTOR SIDE)
A
B
C
SW801
IC801
CN802
-634-419-
21
1
2
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4
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6
7

IC

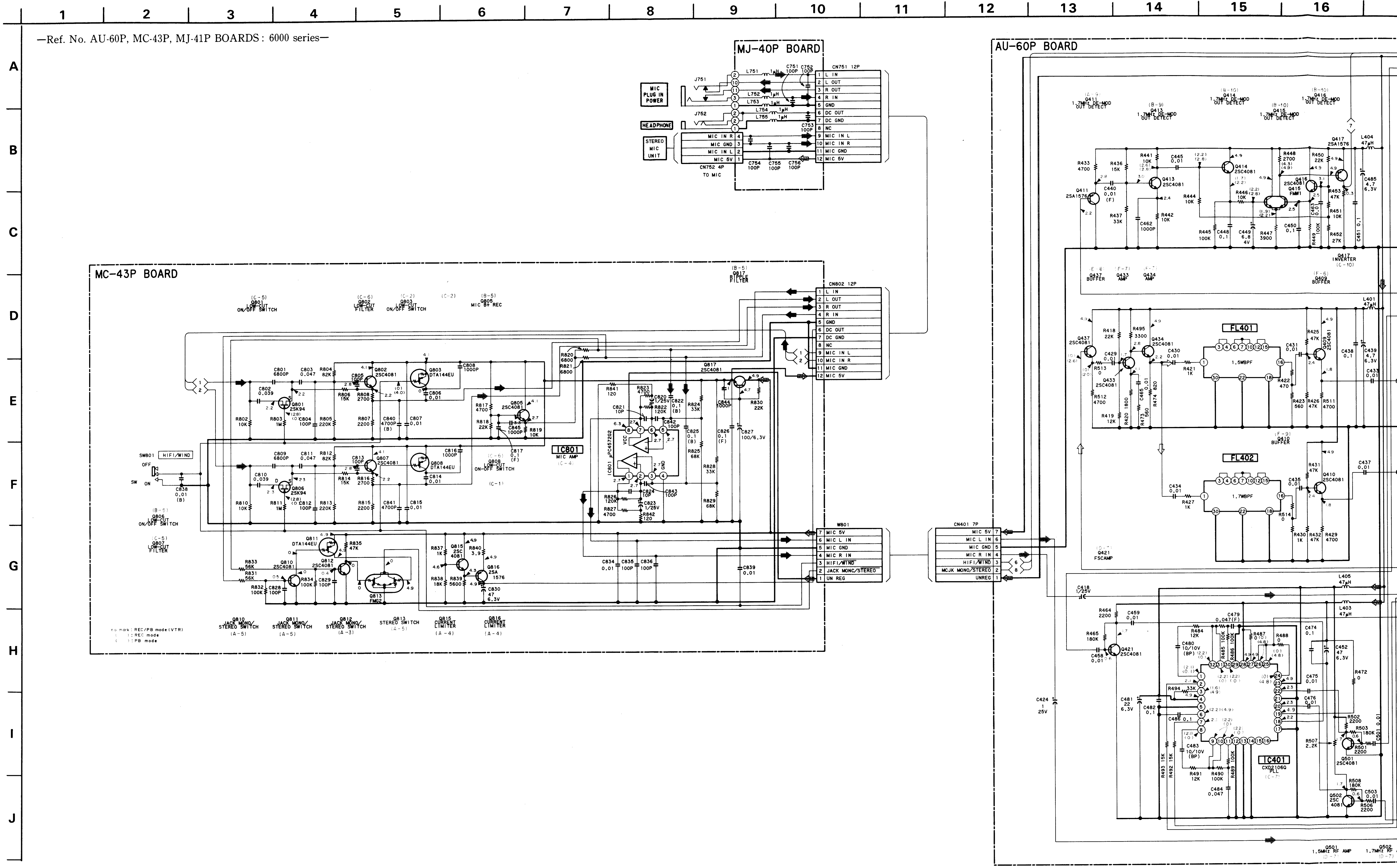
IC801	8-759-111-46	IC UPC4572G2

TRANSISTOR

Q801	8-759-109-44	TRANSISTOR 2SK94
Q802	8-729-905-35	TRANSISTOR 2SC4081-R
Q803	8-729-905-12	TRANSISTOR DTA144EU
Q805	8-729-905-35	TRANSISTOR 2SC4081-R
Q806	8-729-109-44	TRANSISTOR 2SK94
Q807	8-729-905-35	TRANSISTOR 2SC4081-R
Q808	8-729-905-12	TRANSISTOR DTA144EU
Q810	8-729-905-35	TRANSISTOR 2SC4081-R
Q811	8-729-905-12	TRANSISTOR DTA144EU
Q812	8-729-905-35	TRANSISTOR 2SC4081-R
Q813	8-729-904-07	TRANSISTOR FMG2
Q815	8-729-905-35	TRANSISTOR 2SC4081-R
Q816	8-729-905-23	TRANSISTOR 2SA1576-R
Q817	8-729-905-35	TRANSISTOR 2SC4081-R

AU-60P (ATF/AFM PROCESS), MC-43P (MIC AMP), MJ-41P (HEADPHONE/MIC PLUG IN POWER JACK) SCHEMATIC DIAGRAM

—Ref. No. AU-60P, MC-43P, MJ-41P BOARDS: 6000 series—


1
2
3
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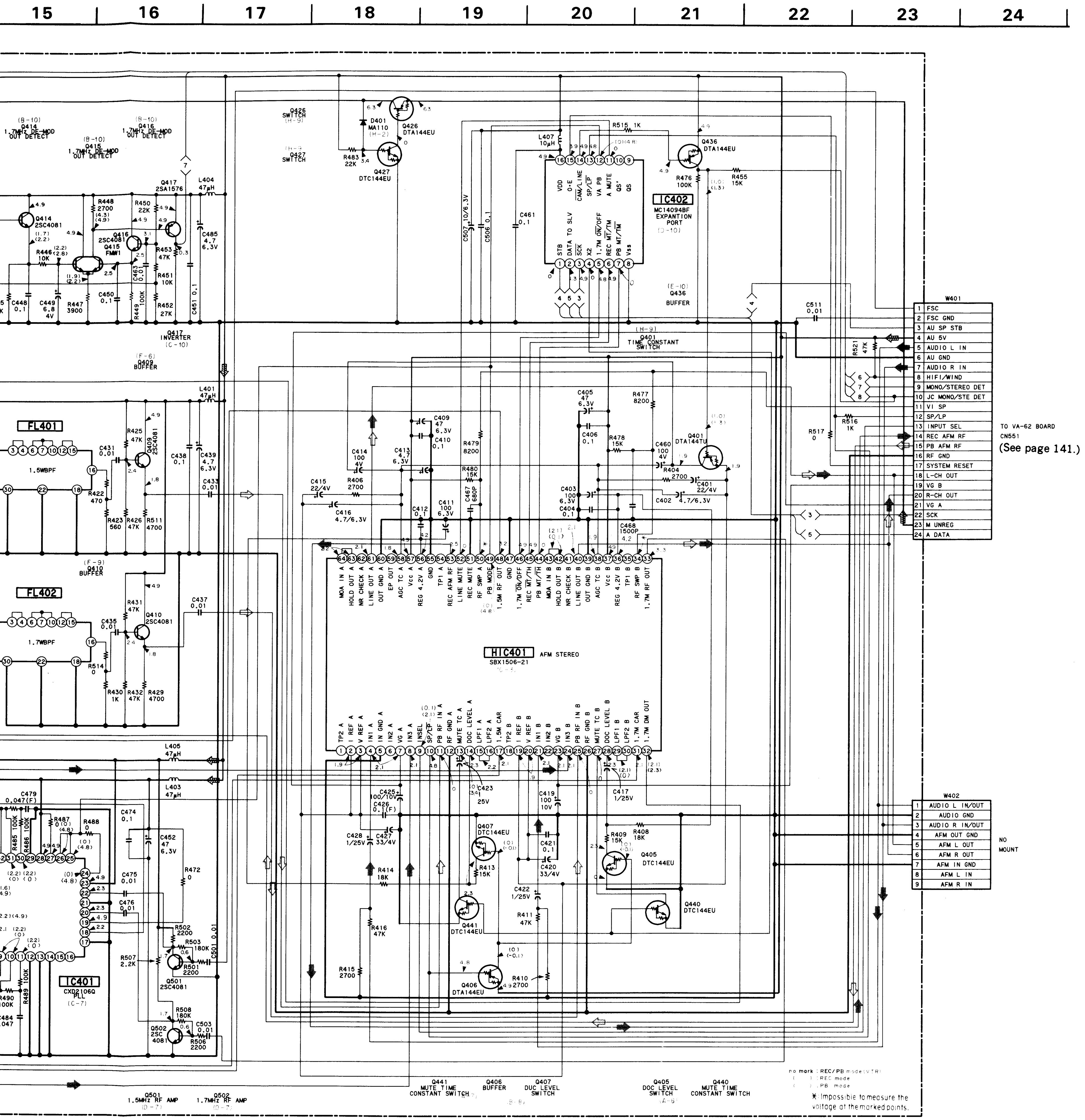
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
MJ-40P BOARD
MIC PLUG IN POWER
HEADPHONE
STEREO MIC UNIT
J751
J752
CN751 12P
L IN
L OUT
R OUT
R IN
GND
DC OUT
DC GND
NC
MIC IN L
MIC IN R
MIC GND
MIC 5V
CN752 4P
TO MIC
MC-43P BOARD
Q801 LOW-CUT ON/OFF SWITCH
Q802 LOW-CUT FILTER
Q803 LOW-CUT ON/OFF SWITCH
Q805 MIC B+ REC
Q817 RIPPLE FILTER
CN802 12P
IC801 MIC AMP
IC801 μPC4572C2
SW801 HIFI/WIND
OFF
ON
Q806 LOW-CUT ON/OFF SWITCH
Q807 LOW-CUT FILTER
Q808 LOW-CUT ON/OFF SWITCH
W801
HIFI/WIND
JACK MONO/STEREO
UN REG
Q810 JACK MONO/STEREO SWITCH
Q811 JACK MONO/STEREO SWITCH
Q812 JACK MONO/STEREO SWITCH
Q813 STEREO SWITCH
Q815 CURRENT LIMITER
Q816 CURRENT LIMITER
No mark: REC/PB mode (VTR)
( ): REC mode
〈 〉: PB mode
CN401 7P
MIC 5V
MIC L IN
MIC GND
MIC R IN
HIFI/WIND
MCJK MONO/STEREO
UNREG
AU-60P BOARD
Q411 1.7MHz DE-MOD OUT DETECT
Q413 1.7MHz DE-MOD OUT DETECT
Q414 1.7MHz DE-MOD OUT DETECT
Q415 1.7MHz DE-MOD OUT DETECT
Q416 1.7MHz DE-MOD OUT DETECT
Q417 INVERTER
Q437 BUFFER
Q433 AMP
Q434 AMP
Q409 BUFFER
Q410 BUFFER
FL401
1.5WBPF
FL402
1.7WBPF
Q421 FSCAMP
IC401 CXD2106Q PLL
Q501 1.5MHz RF AMP
Q502 1.7MHz RF

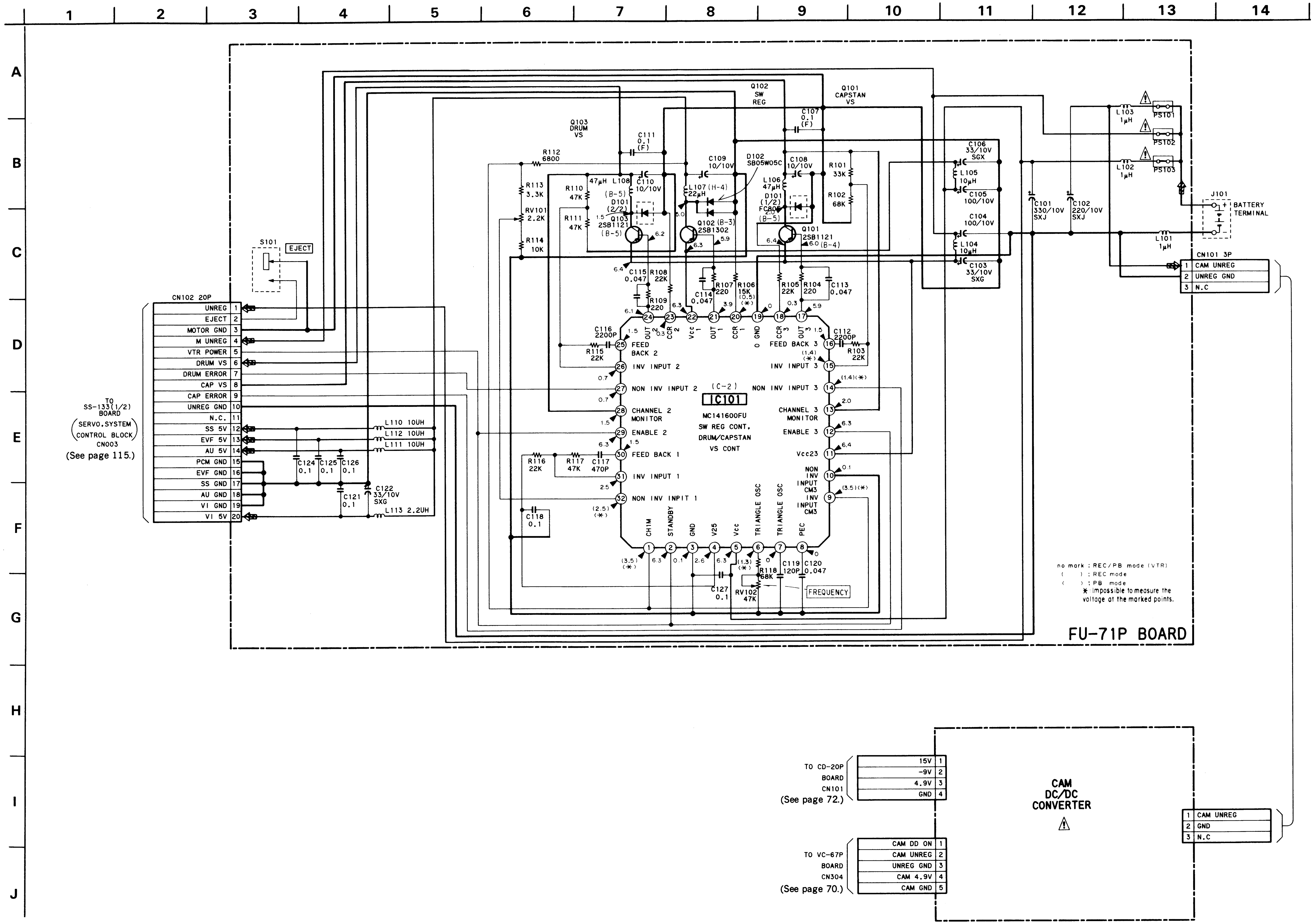

15
16
17
18
19
20
21
22
23
24
Q414 1.7MHz DE-MOD OUT DETECT (B-10)
Q416 1.7MHz DE-MOD OUT DETECT (B-10)
Q415 1.7MHz DE-MOD OUT DETECT (B-10)
Q426 SWITCH (H-9)
Q427 SWITCH (H-9)
D401 MA110
Q426 DTA144EU
Q427 DTC144EU
R483 22K
L407 10μH
R515 1K
Q436 DTA144EU
R476 100K
R455 15K
IC402
MC14094BF EXPANTION PORT (D-10)
VDD
O·E
CAM/LINE
SP/LP
VA PB
A MUTE
QS'
QS
STB
DATA TO SLV
SCK
X2
1.7M ON/OFF
REC MT/TM
PB MT/TM
Vss
(E-10) Q436 BUFFER
C507 10/6.3V
C506 0.1
C461 0.1
C511 0.01
Q417 2SA1576
L404 47μH
C485 4.7 6.3V
Q414 2SC4081
Q416 2SC4081
Q415 FMW1
R448 2700
R450 22K
R453 47K
R451 10K
R446 10K
C448 0.1
C449 6.8 4V
R447 3900
C450 0.1
R449 100K
C463 0.01
R452 27K
C451 0.1
Q417 INVERTER (C-10)
(F-6) Q409 BUFFER
(H-9) Q401 TIME CONSTANT SWITCH
R521 47K
FL401
1.5WBPF
L401 47μH
R425 47K
Q409 2SC4081
C431 0.01
C438 0.1
C439 4.7 6.3V
C433 0.01
R422 470
R423 560
R426 47K
R511 4700
(F-9) Q410 BUFFER
FL402
1.7WBPF
R431 47K
Q410 2SC4081
C435 0.01
C437 0.01
R514 0
R430 1K
R432 47K
R429 4700
C409 47 6.3V
C410 0.1
C414 100 4V
C413 4.7 6.3V
R479 8200
R480 15K
C467 680P
C415 22/4V
R406 2700
C416 4.7/6.3V
C412 0.1
C411 100 6.3V
C405 47 6.3V
R477 8200
C406 0.1
R478 15K
C460 100 4V
Q401 DTA144TU
R404 2700
C401 22/4V
C402 4.7/6.3V
C403 100 6.3V
C404 0.1
C468 1500P
R517 0
R516 1K
HIC401 AFM STEREO
SBX1506-21
MOA IN A
HOLD OUT A
NR CHECK A
LINE OUT A
OUT GND A
EP OUT
AGC TC A
Vcc A
REG 4.2V A
GND
TP1 A
REC AFM RF
LINE MUTE
REC MUTE
RF SWP A
PB MODE
1.5M RF OUT
GND
1.7M ON/OFF
REC MT/TM
PB MT/TM
MOA IN B
HOLD OUT B
NR CHECK B
LINE OUT B
OUT GND B
AGC TC B
Vcc B
REG 4.2V B
TP1 B
RF SWP B
1.7M RF OUT
TP2 A
I REF A
V REF A
IN1 A
IN GND A
IN2 A
VG A
IN3 A
NSEL
SP/LP
PB RF IN A
RF GND A
MUTE TC A
DOC LEVEL A
LPF1 A
LPF2 A
1.5M CAR
TP2 B
I REF B
V REF B
IN1 B
IN2 B
VG B
IN3 B
PB RF IN B
RF GND B
MUTE TC B
DOC LEVEL B
LPF1 B
LPF2 B
1.7M CAR
1.7M DM OUT
L405 47μH
L403 47μH
C479 0.047(F)
R487
R488 0
R485 100K
R486 100K
C474 0.1
C452 47 6.3V
R472 0
C475 0.01
C476 0.01
R502 2200
R503 180K
R501 2200
C501 0.01
R507 2.2K
Q501 2SC4081
IC401
CXD2106Q PLL (C-7)
R489 100K
R490 100K
C484 0.047
R508 180K
C503 0.01
Q502 2SC4081
R506 2200
Q501 1.5MHz RF AMP (D-7)
Q502 1.7MHz RF AMP (D-7)
C425 100/10V
C426 0.1(F)
C428 1/25V
C427 33/4V
C423 25V
C419 100 10V
C417 1/25V
Q407 DTC144EU
R413 15K
C421 0.1
C420 33/4V
R409 15K
R408 18K
Q405 DTC144EU
R414 18K
R416 47K
R415 2700
Q441 DTC144EU
C422 1/25V
R411 47K
Q440 DTC144EU
Q406 DTA144EU
R410 2700
W401
1 FSC
2 FSC GND
3 AU SP STB
4 AU 5V
5 AUDIO L IN
6 AU GND
7 AUDIO R IN
8 HIFI/WIND
9 MONO/STEREO DET
10 JC MONO/STE DET
11 VI SP
12 SP/LP
13 INPUT SEL
14 REC AFM RF
15 PB AFM RF
16 RF GND
17 SYSTEM RESET
18 L-CH OUT
19 VG B
20 R-CH OUT
21 VG A
22 SCK
23 M UNREG
24 A DATA
TO VA-62 BOARD
CN551
(See page 141.)
W402
1 AUDIO L IN/OUT
2 AUDIO GND
3 AUDIO R IN/OUT
4 AFM OUT GND
5 AFM L OUT
6 AFM R OUT
7 AFM IN GND
8 AFM L IN
9 AFM R IN
NO MOUNT
Q441 MUTE TIME CONSTANT SWITCH
Q406 BUFFER (B-8)
Q407 DUC LEVEL SWITCH
Q405 DOC LEVEL SWITCH (A-8)
Q440 MUTE TIME CONSTANT SWITCH
no mark : REC/PB mode (VTR)
( ) : REC mode
( ) : PB mode
✱ : Impossible to measure the voltage at the marked points.

- **Signal path**

	AUDIO Signal
REC	➡
PB	⇨

FU-71P (POWER) SCHEMATIC DIAGRAM

—Ref. No. FU-71P BOARD: 3000 series—


1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I J
CN102 20P
UNREG 1
EJECT 2
MOTOR GND 3
M UNREG 4
VTR POWER 5
DRUM VS 6
DRUM ERROR 7
CAP VS 8
CAP ERROR 9
UNREG GND 10
N.C. 11
SS 5V 12
EVF 5V 13
AU 5V 14
PCM GND 15
EVF GND 16
SS GND 17
AU GND 18
VI GND 19
VI 5V 20
TO SS-133(1/2) BOARD
(SERVO.SYSTEM CONTROL BLOCK) CN003
(See page 115.)
S101
EJECT
L110 10UH
L112 10UH
L111 10UH
L113 2.2UH
C124 0.1
C125 0.1
C126 0.1
C121 0.1
C122 33/10V SXG
Q103 DRUM VS
Q102 SW REG
Q101 CAPSTAN VS
R112 6800
R113 3.3K
RV101 2.2K
R114 10K
R110 47K
R111 47K
47μH L108 (B-5)
C110 10/10V
C111 0.1 (F)
D101 (2/2)
Q103 2SB1121 (B-5)
C109 10/10V
L107 (H-4) 22μH
Q102 (B-3) 2SB1302
D102 SB05W05C
C108 10/10V
L106 47μH
D101 (1/2) FC806 (B-5)
C107 0.1 (F)
Q101 2SB1121 (B-4)
R101 33K
R102 68K
C115 0.047
R108 22K
R109 220
C114 0.047
R107 220
R106 15K
R105 22K
R104 220
C113 0.047
C116 2200P
R115 22K
C112 2200P
R103 22K
IC101
(C-2)
MC141600FU
SW REG CONT. DRUM/CAPSTAN VS CONT
OUT 2
CCR 2
Vcc 1
OUT 1
CCR 1
0 GND
CCR 3
OUT 3
FEED BACK 2
INV INPUT 2
NON INV INPUT 2
CHANNEL 2 MONITOR
ENABLE 2
FEED BACK 1
INV INPUT 1
NON INV INPIT 1
FEED BACK 3
INV INPUT 3
NON INV INPUT 3
CHANNEL 3 MONITOR
ENABLE 3
Vcc23
NON INV INPUT CM3
INV INPUT CM3
CH1M
STANDBY
GND
V25
Vcc
TRIANGLE OSC
TRIANGLE OSC
PEC
R116 22K
R117 47K
C117 470P
C118 0.1
C127 0.1
R118 68K
RV102 47K
C119 120P
C120 0.047
FREQUENCY
C106 33/10V SGX
L105 10μH
C105 100/10V
C104 100/10V
L104 10μH
C103 33/10V SXG
C101 330/10V SXJ
C102 220/10V SXJ
L103 1μH
L102 1μH
L101 1μH
PS101
PS102
PS103
J101
BATTERY TERMINAL
CN101 3P
1 CAM UNREG
2 UNREG GND
3 N.C
FU-71P BOARD
no mark : REC/PB mode (VTR)
( ) : REC mode
⟨ ⟩ : PB mode
✱ : impossible to measure the voltage at the marked points.
TO CD-20P BOARD CN101
(See page 72.)
15V 1
-9V 2
4.9V 3
GND 4
TO VC-67P BOARD CN304
(See page 70.)
CAM DD ON 1
CAM UNREG 2
UNREG GND 3
CAM 4.9V 4
CAM GND 5
CAM DC/DC CONVERTER
1 CAM UNREG
2 GND
3 N.C

D101	8-719-981-
D102	8-719-981-
IC101	8-759-035-
Q101	8-729-805-2
Q102	8-729-822-6
Q103	8-729-805-2

FU-71P (POWER) PRINTED WIRING BOARD

—Ref. No. FU-71P BOARD: 3000 series—

DIODE

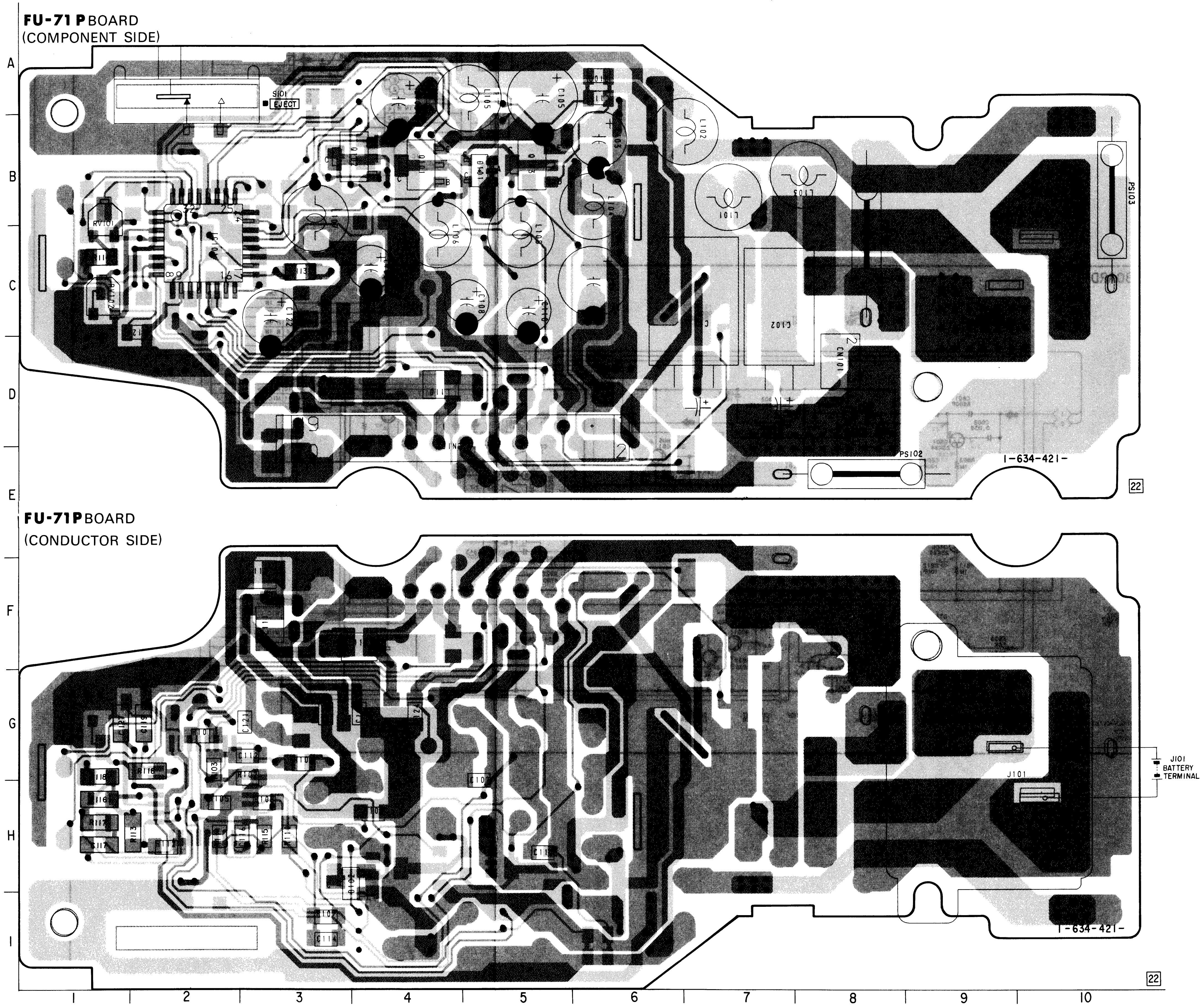
D101	8-719-981-59	DIODE FC805
D102	8-719-981-56	DIODE SB05W05CP

IC

IC101	8-759-035-98	IC MC141600FU

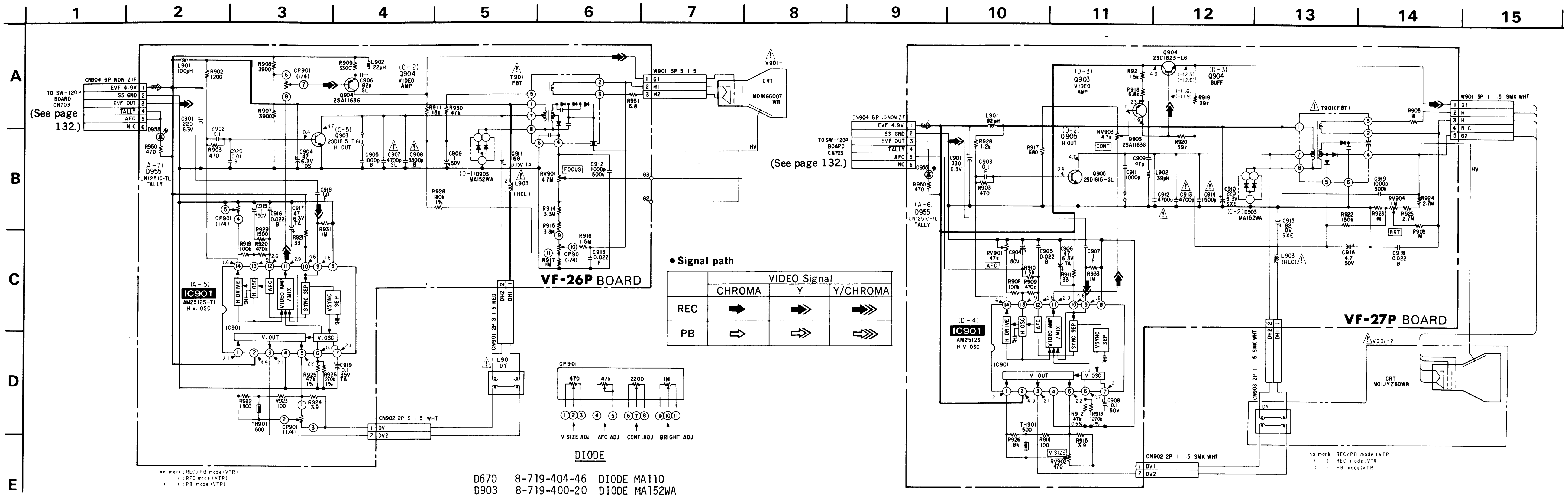
TRANSISTOR

Q101	8-729-805-25	TRANSISTOR 2SB1121
Q102	8-729-822-60	TRANSISTOR 2SB1302-S
Q103	8-729-805-25	TRANSISTOR 2SB1121


FU-71P BOARD
(COMPONENT SIDE)
FU-71P BOARD
(CONDUCTOR SIDE)
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
9
10
S101
EJECT
RV101
RV102
IC101
L101
L102
L103
L105
C105
C102
C108
C110
C122
CN101
PS102
PS103
J101
J101
BATTERY
TERMINAL
1-634-421-
1-634-421-
22
22

VF-26P, VF-27P (VIEWFINDER) SCHEMATIC DIAGRAM

—Ref. No. VF-26P BOARDS : 8000 series, VF-27P BOARD : 9000 series—



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
CN904 6P NON ZIF
TO SW-120P BOARD CN703
(See page 132.)
EVF 4.9V
SS GND
EVF OUT
TALLY
AFC
N.C
D955 LN1251C-TL TALLY
IC901 AM2512S-T1 H.V. OSC
H DRIVE
H. OSC
AFC
VIDEO AMP /MIX
SYNC SEP
VSYNC SEP
V. OUT
V. OSC
Q904 2SA1163G VIDEO AMP
Q903 2SD1615-T(GL) H OUT
T901 FBT
W901 3P S 1.5
V901-1 CRT M01KGG007 WB
FOCUS
RV901 4.7M
D903 MA152WA
L903 (HCL)
HV
G3
G2
CN903 2P S 1.5 RED
DH2
DH1
L901 DY
CN902 2P S 1.5 WHT
DV1
DV2
TH901 500
CP901
470
47k
2200
1M
V SIZE ADJ
AFC ADJ
CONT ADJ
BRIGHT ADJ
VF-26P BOARD
no mark : REC/PB mode (VTR)
( ) : REC mode (VTR)
〈 〉 : PB mode (VTR)
CN904 6P L.0 NON ZIF
TO SW-120P BOARD CN703
(See page 132.)
Q903 2SA1163G VIDEO AMP
Q904 2SC1623-L6 BUFF
Q905 2SD1615-GL H OUT
RV903 4.7k CONT
RV901 47k AFC
RV902 1M BRT
RV904 1M
D903 MA152WA
T901 (FBT)
W901 5P 1 1.5 SMK WHT
G1
H
H
N.C
G2
L903 (HLC)
IC901 AM2512S H.V. OSC
V SIZE RV902 470
CN903 2P 1 1.5 SMK WHT
CN902 2P 1 1.5 SMK WHT
V901-2 CRT M01JYZ60WB
VF-27P BOARD
no mark : REC/PB mode (VTR)
( ) : REC mode (VTR)
〈 〉 : PB mode (VTR)

• Signal path

	VIDEO Signal		
	CHROMA	Y	Y/CHROMA
REC	➡	➡➡	➡➡➡
PB	⇨	⇨⇨	⇨⇨⇨

DIODE

D670	8-719-404-46	DIODE	MA110
D903	8-719-400-20	DIODE	MA152WA
D955	8-719-404-19	DIODE	LN1251C

IC

IC901	8-759-420-01	IC	AN2512S-T1

TRANSISTOR

Q903	8-729-106-68	TRANSISTOR	2SD1615-AGP
Q904	8-729-216-31	TRANSISTOR	2SA1163G

DIODE

D903	8-719-400-20	DIODE	MA152WA
D955	8-719-404-19	DIODE	LN1251C

IC

IC901	8-759-420-01	IC	AN2512S

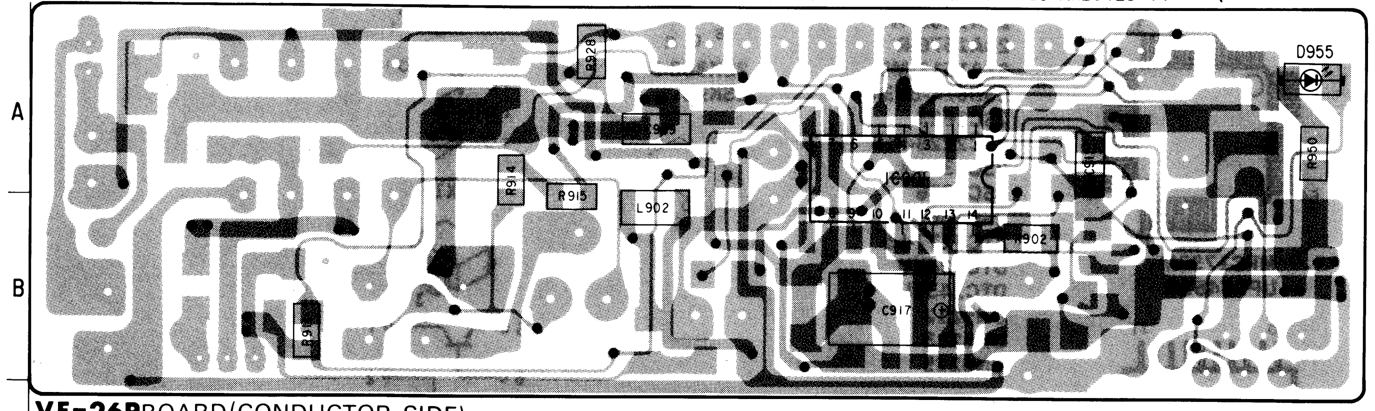
TRANSISTOR

Q903	8-729-216-31	TRANSISTOR	2SA1163G
Q904	8-729-100-66	TRANSISTOR	2SC1623
Q905	8-729-106-68	TRANSISTOR	2SD1615-AGP

VF-26P, VF-27P (VIEWFINDER) PRINTED WIRING BOARD

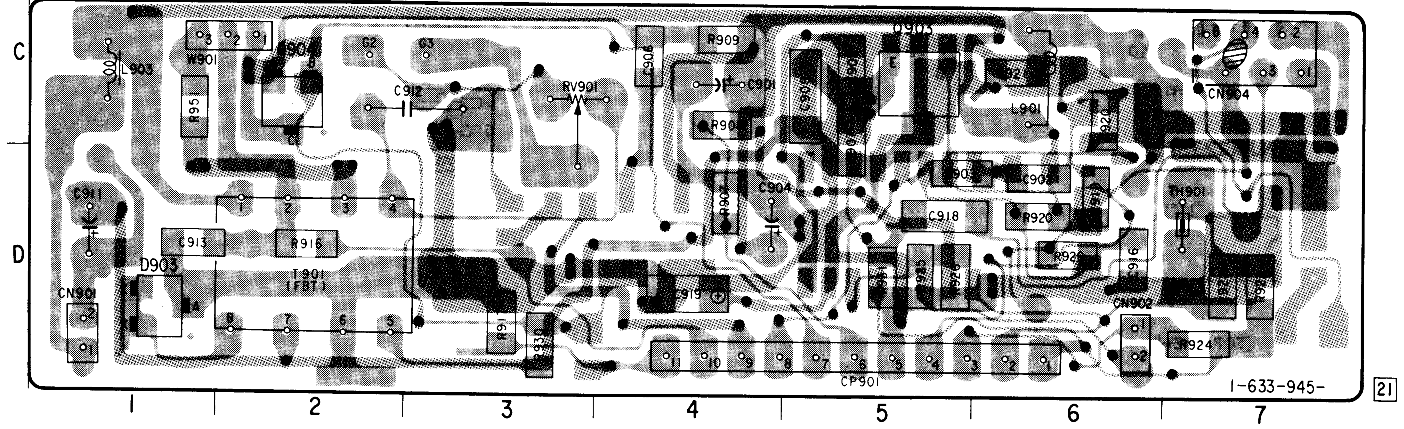
—Ref. No. VF-26P BOARDS : 8000 series, VF-27P BOARD : 9000 series—

VF-26PBOARD(COMPONENT SIDE)



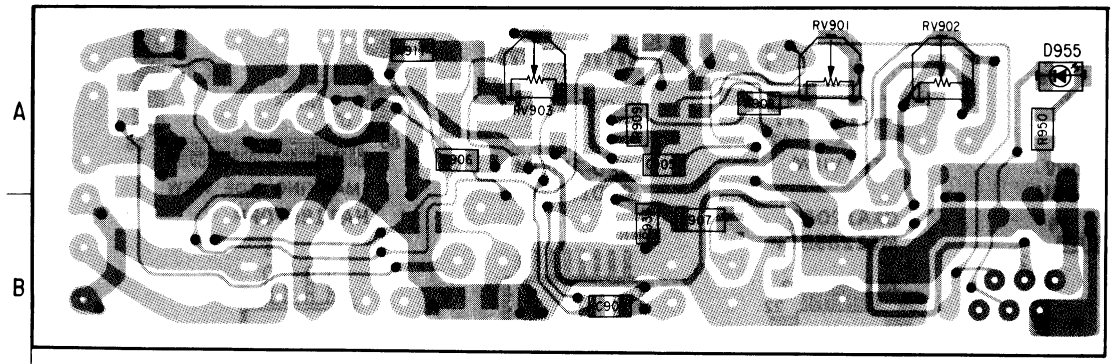
A
B
D955
R928
R950
R914
R915
L902
IC901
Q902
C917

VF-26PBOARD(CONDUCTOR SIDE)



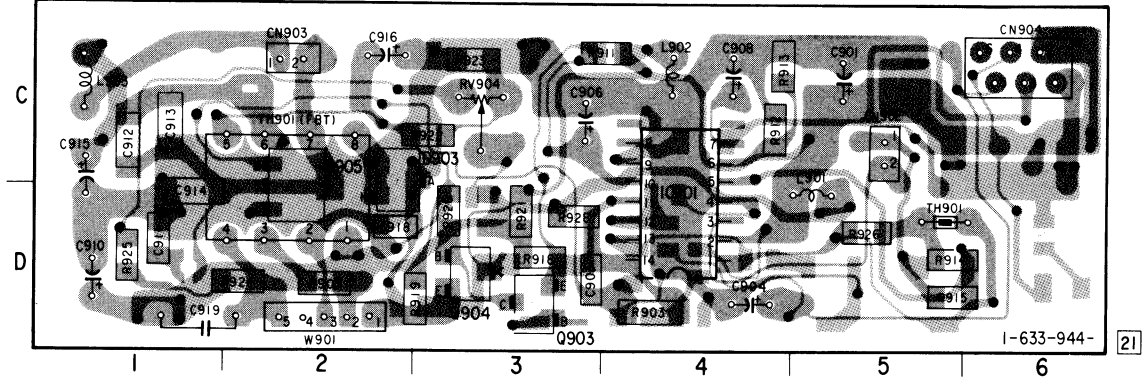
C
D
L903
W901
Q904
R951
C912
RV901
C906
C901
R909
Q903
L901
CN904
TH901
C911
C913
R916
D903
T901 (FBT)
CN901
C904
C905
C918
R920
C919
CN902
R924
CP901
1-633-945-
21
1
2
3
4
5
6
7

VF-27PBOARD(COMPONENT SIDE)



A
B
RV901
RV902
D955
RV903
R950
C917

VF-27PBOARD(CONDUCTOR SIDE)



C
D
CN903
C916
L902
C908
C901
CN904
RV904
T901(FBT)
C906
C915
C912
R913
C914
C910
R925
IC901
TH901
R914
R915
R926
C919
W901
Q904
Q903
R903
1-633-944-
21
1
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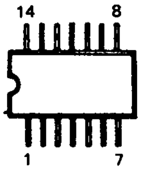
3
4
5
6

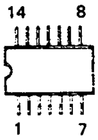
4-3. SEMICONDUCTORS

AN2512S



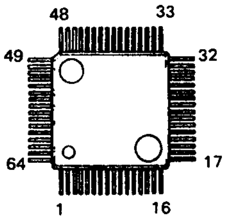
(TOP VIEW)

CX20095A
MC14066BF
TL1596CDB

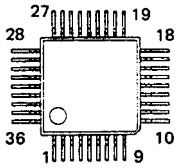


(TOP VIEW)

CXA1207R
CXD1205R

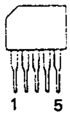

48
33
49
32
64
17
1
16

CXD1159Q

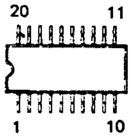

27
19
28
18
36
10
1
9

MARKING SIDE VIEW

BA401

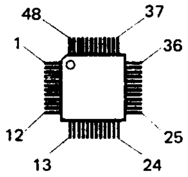


CX20102
µPD7564G-540



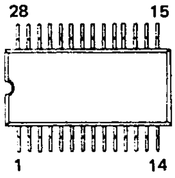
(TOP VIEW)

CXA1208M
CXA1392R


48
37
1
36
12
25
13
24

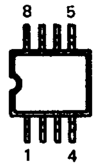
(TOP VIEW)

CXK58257M-10L



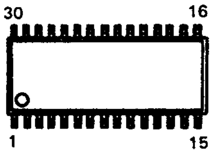
(TOP VIEW)

BR93C46
LM393D
NJM2073M
µPC4572G2



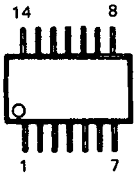
(TOP VIEW)

CXA1127M
CXA8006M



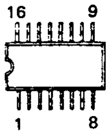
(TOP VIEW)

CXA8010M
LM324D



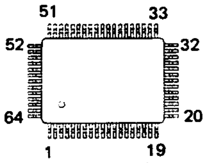
(TOP VIEW)

CXL1506M
MC14028BF
MC14053BF
TC4028BF



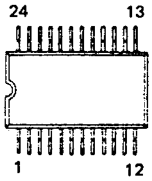
(TOP VIEW)

CF79028PG


51
33
52
32
64
20
1
19

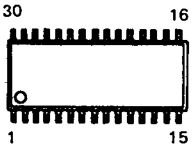
(TOP VIEW)

CXA1203N
CXA1393AN



(TOP VIEW)

CXA8016M



(TOP VIEW)

CXP80116-698Q
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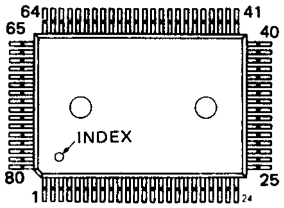
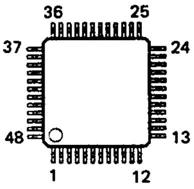
µPD75316GF-076-3B9


64
41
65
40
INDEX
80
25
1
24

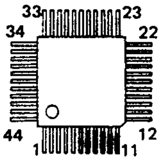
MARKING SIDE VIEW

CF79050PV
MB673198U

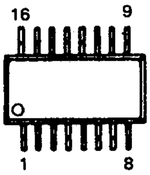

36
25
37
24
48
13
1
12

(TOP VIEW)

CXA1204Q
M51285BGP

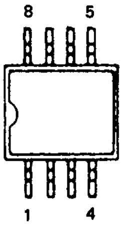

33
23
34
22
44
12
1
11

CXD-2107M
CXD1172AM



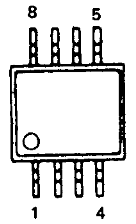
(TOP VIEW)

HA118070FP

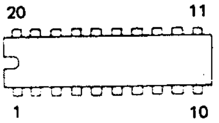


(TOP VIEW)

LM358D
NJM2234M
NJM2235M
RC3414M

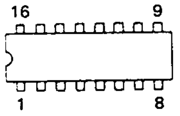


MB88341PFV



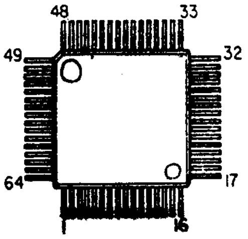
(TOP VIEW)

MC10H116M

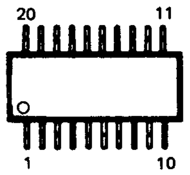


(TOP VIEW)

MC68HC11E9FU

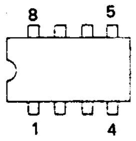

48
33
49
32
64
17
1
16

MPC1737M
UPD6451G



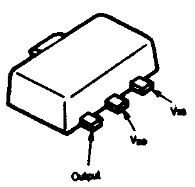
(TOP VIEW)

NJM2233AM

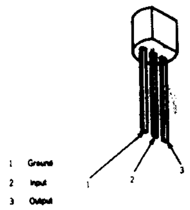


(TOP VIEW)

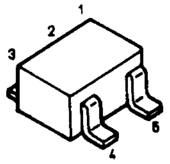
S-8054ALB-LM-S


Vss
Vdd
Output

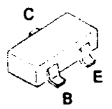
S-81250HG-RD-S


1 Ground
2 Input
3 Output
1
2
3

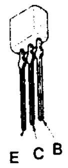
SC14S66F
TC7S08F



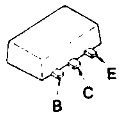
2SA1162
2SA1163G
2SA1163L
2SA1202FAT
2SA1576-R
2SA1611-M5
2SB624-BV345
2SC1623
2SC2223-F13
2SC3326N
2SC3356
2SC4081-R
2SC4177-L5
DTC124XU
DTC143TU
UN5212
UN5213
UN5215



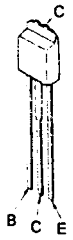
2SA1175-HFE



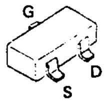
2SB1121
2SB1302-S
2SB1132-QR
2SB798-DL
2SD1615A-GP
2SD874A-R
2SD874A-S



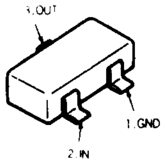
2SB1202FAT



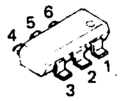
2SK300-3
2SK94



DTA124EU
DTA143EU
DTA144EU
DTA144TU
DTC114TU
DTC115EU
DTC144EU
DTC144WU

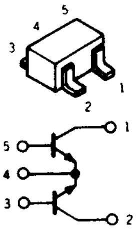

3.OUT
1.GND
2.IN

FC101

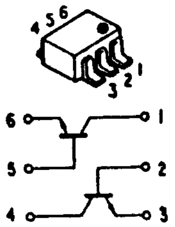


1 : 1C, 2 : 1B, 3 : 2E,
4 : 2C, 5 : 2B, 6 : 1E

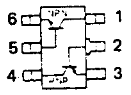
FMA2
FMG2
FMG4
FMG5
FMW1


5
4
3
1
2
1
5
4
3
2

IMX1


4
5
6
1
2
3
6
1
5
2
4
3

XN4601


6
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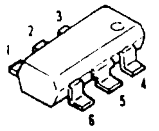
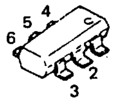
4
1
2
3
NPN
PNP

XN6213



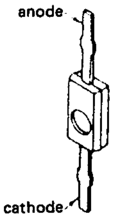
1: 1C, 2: 1B, 3: 2C,
4: 2B, 5: 2E, 6: 1E

XN6215
XN6401
XN6501

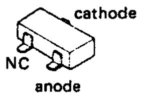


1: 1C, 2: 1B, 3: 2C,
4: 1E, 5: 2E, 6: 2B

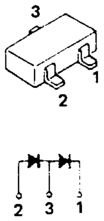
1T32


anode
cathode

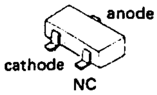
1SS196


cathode
NC
anode

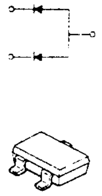
1SS226



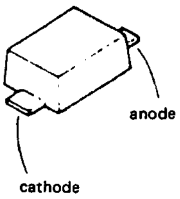
DAN202U
MA151A


anode
cathode
NC

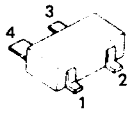
DAP202U



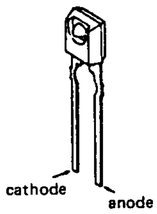
DTZ12
DTZ9.1
MA110


anode
cathode

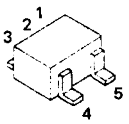
DWA010



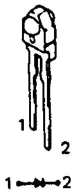
EE-TP109


cathode
anode

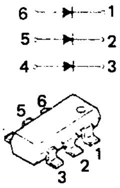
FC805



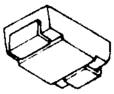
GL452S



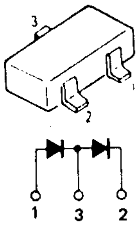
IMN10


6
1
5
2
4
3
5
6
1
2
3

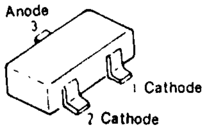
LN1251C



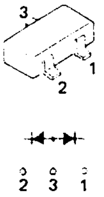
MA143



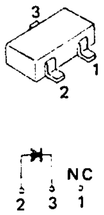
MA141WA
MA152WA


Anode
3
1 Cathode
2 Cathode

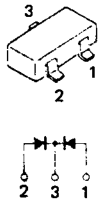
MA152WA



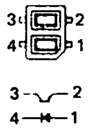
SB01-05CP



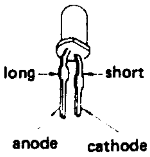
SB05W05CP



TLP907-0



TLR124


long
short
anode
cathode

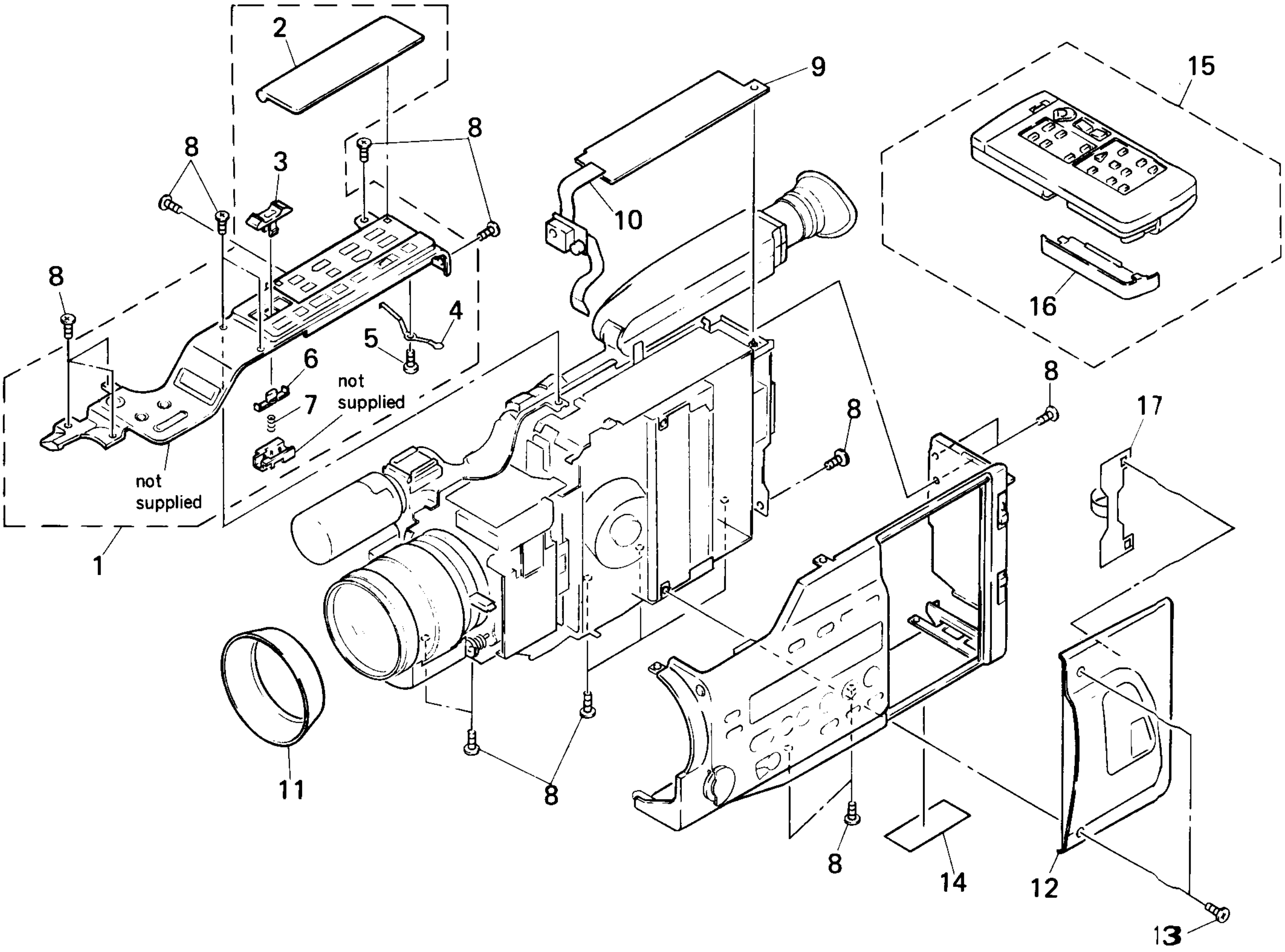
SECTION 5
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

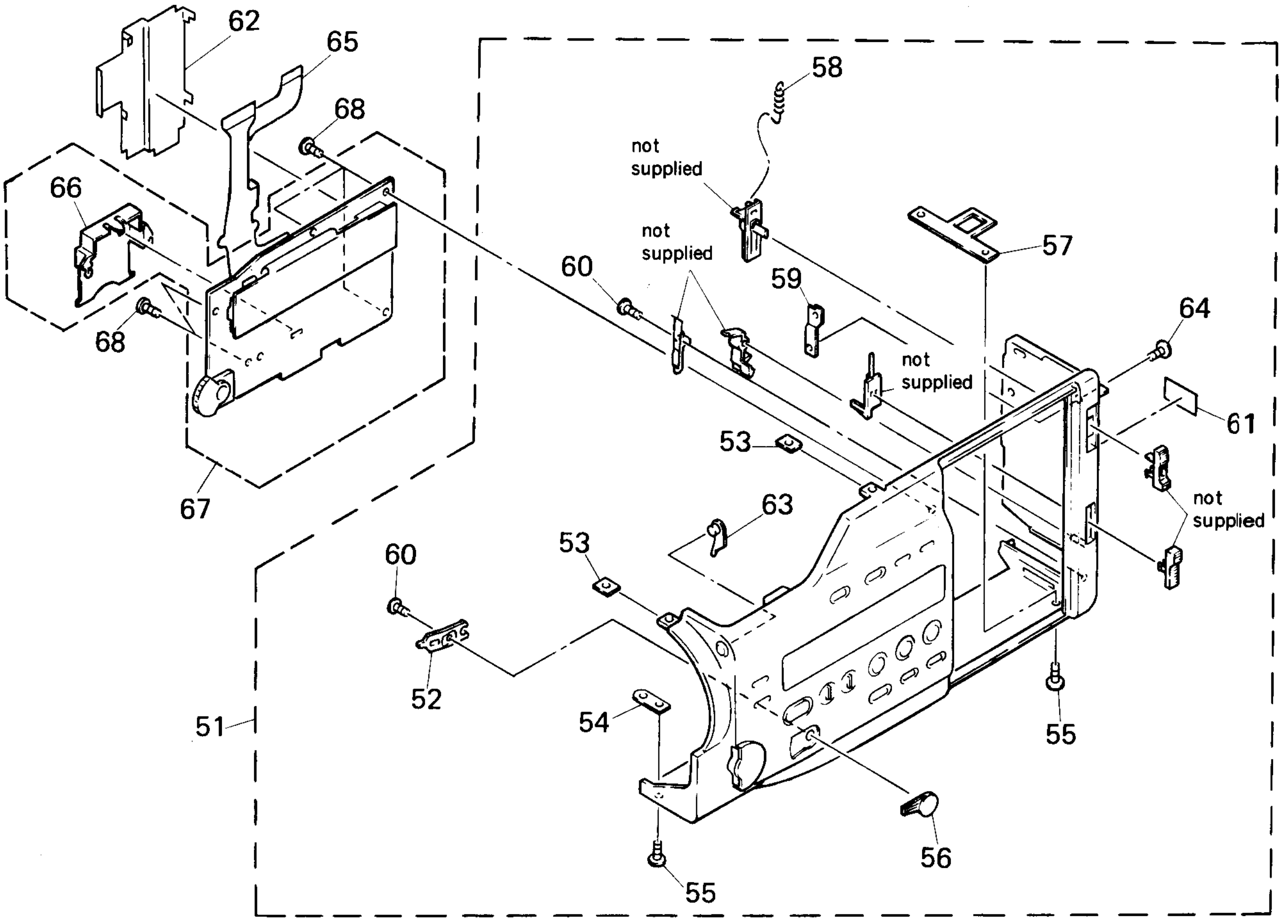
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

5-1. CABINET (UPPER) ASSEMBLY



No.	Part No.	Description	Remark
1	X-3744-724-1	CABINET (UPPER) ASSY (E/AUS MODEL)	2-7
	X-3744-765-1	CABINET (UPPER) ASSY (AEP/UK MODEL)	2-7
2	3-744-750-01	LID, UPPER	
3	3-744-723-01	BUTTON (10), POWER	
4	3-744-732-01	SPRING, CLICK	
5	3-713-790-11	SCREW (M2X5), TAPPING, P3	
6	*3-718-257-11	BUTTON, PUSH, POWER	
7	3-303-973-00	SPRING, COMPRESSION	
8	3-719-381-01	SCREW (M2X4)	
9	*A-7071-293-A	FK-46E BOARD, COMPLETE (E/AUS MODEL)	
10	*1-634-428-11	FP-257 BOARD	
11	3-739-844-01	HOOD, LENS	
12	X-3744-766-1	LID ASSY, CASSETTE	
13	3-733-912-11	SCREW (M2X4.5), SPECIAL HEAD	
14	*3-749-646-01	LABEL, MODEL NUMBER (E/UK/AUS MODEL)	
15	1-465-505-11	COMMANDER, REMOTE (E MODEL)	16
	*1-465-505-51	COMMANDER, REMOTE (AEP/UK/AUS MODEL)	16
16	3-742-854-01	COVER, BATTERY	
17	3-746-253-02	RIBBON, LID.RETAINER	

5-2. CABINET (RIGHT) ASSEMBLY


62
65
68
66
68
67
58
not supplied
not supplied
60
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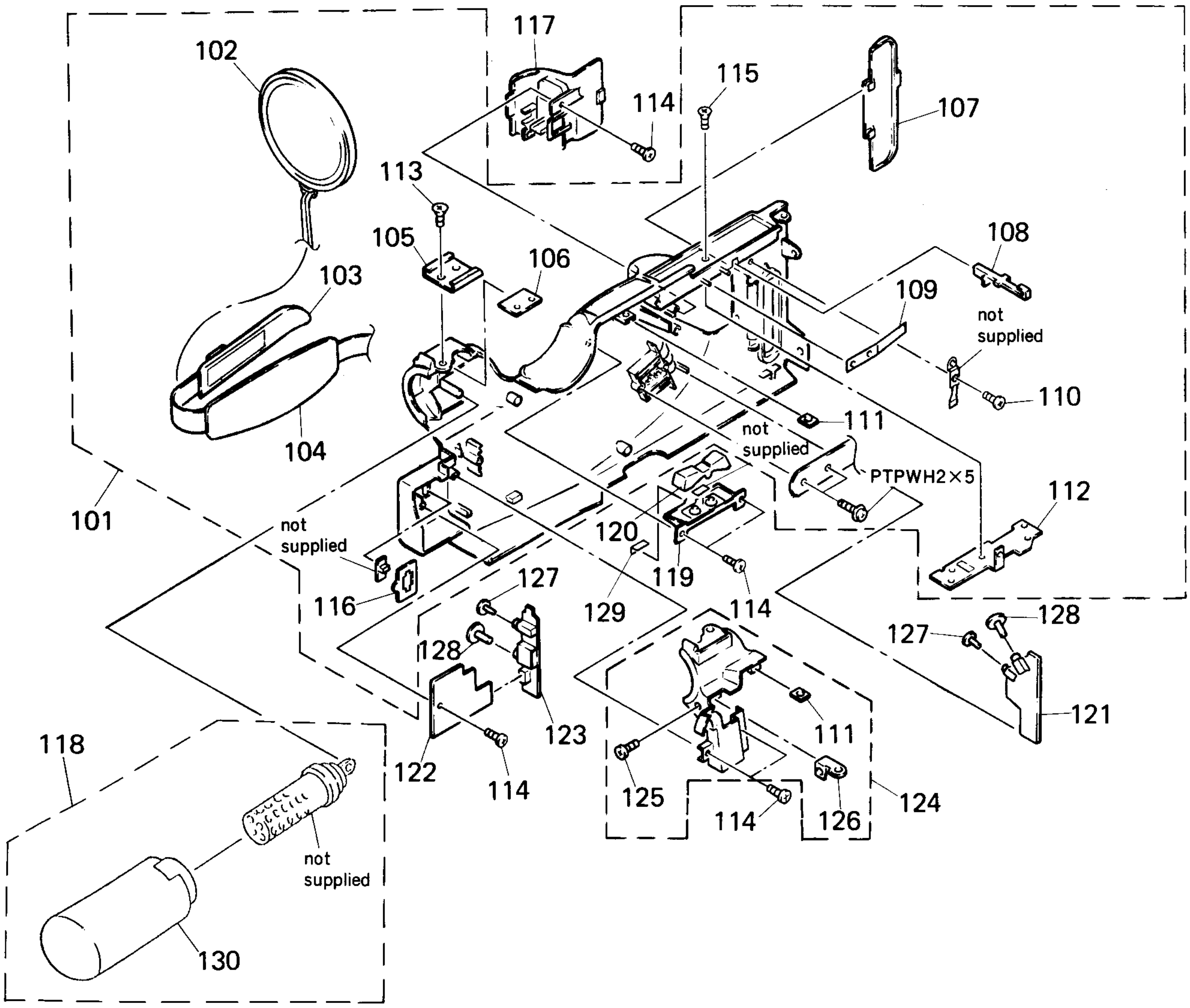
57
64
not supplied
61
not supplied
53
63
53
60
52
51
54
55
56
55

No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	X-3744-726-1	CABINET (R) SUB ASSY	52-61, 63, 64	60	3-713-790-11	SCREW (M2X5), TAPPING, P3	
52	3-744-734-01	LEVER, AUTO		61	*3-719-683-01	LABEL, BATTERY FITTING	
53	3-718-233-01	NUT, PLATE		62	*3-746-220-01	CASE, SHIELD, FD	
54	3-727-915-01	NUT, PLATE		63	3-727-922-01	PLATE, LIGHT GUIDE, REC	
55	3-719-381-01	SCREW (M2X4)		64	3-744-720-11	SCREW (M2X3)	
56	3-744-733-01	KNOB, AUTO		65	1-634-433-11	FP-262 FLEXIBLE BOARD	
57	3-744-740-01	SHEET METAL (A), STRAP		66	3-746-207-01	COVER, LITIUM	
58	3-674-402-00	SPRING, TENSION		67	*A-7062-332-B	FD-15P BOARD, COMPLETE	66
59	3-744-741-01	SHEET METAL, R		68	3-713-790-11	SCREW (M2X5), TAPPING, P3	

5-3. CABINET (GRIP) ASSEMBLY


102
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115
114
107
113
105
106
108
103
109
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110
111
104
not supplied
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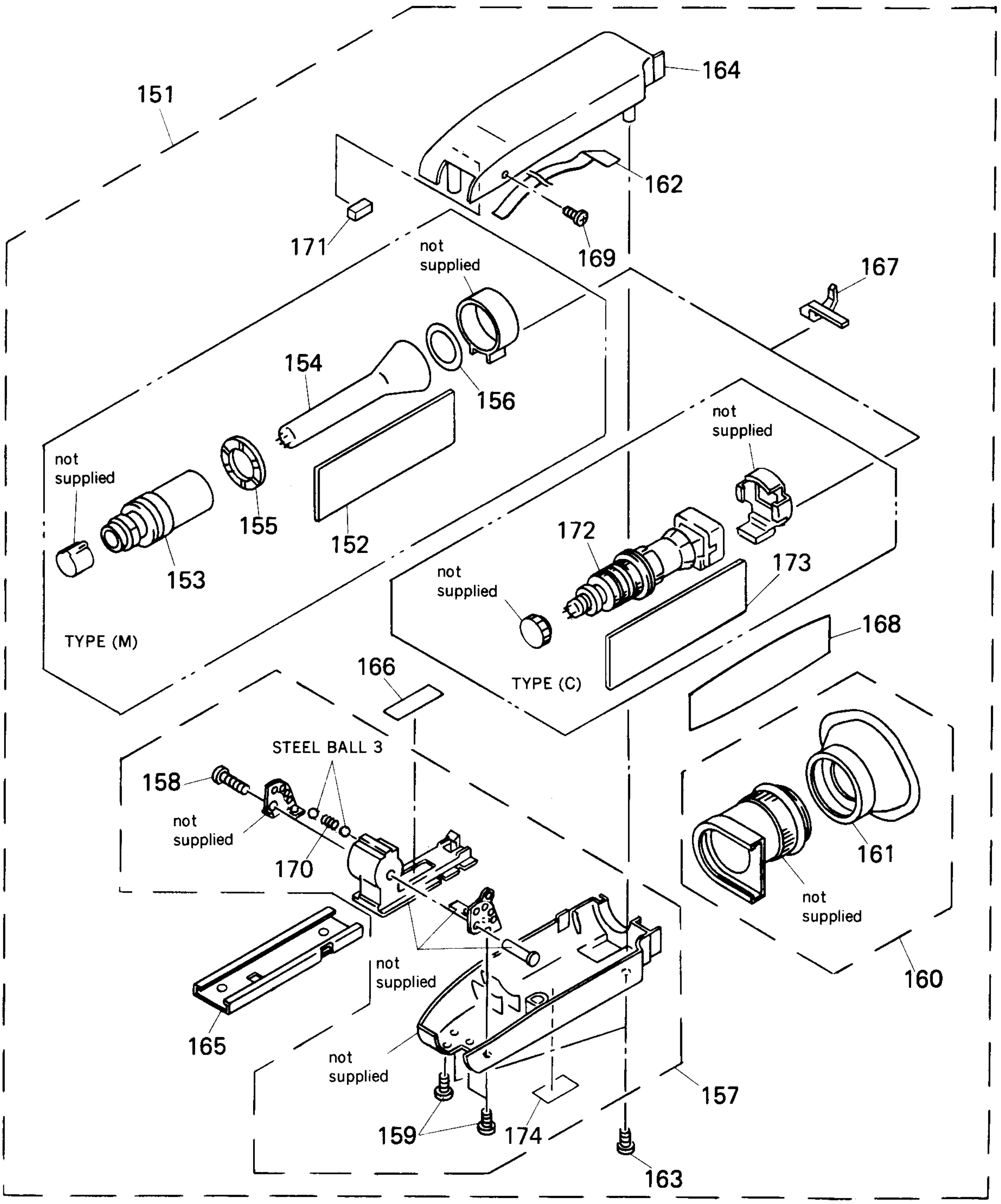
112
101
not supplied
120
127
116
119
129
114
128
127
128
121
111
123
118
122
114
125
124
114
126
not supplied
130

No.	Part No.	Description	Remark
101	X-3744-725-1	CABINET (G) SUB ASSY(E/AUS MODEL)	102-116
	X-3744-771-2	CABINET (G) SUB ASSY (AEP/UK)	102-116
102	X-3744-708-1	CAP ASSY, HOOD	
103	3-739-866-81	BELT, GRIP	
104	3-724-591-01	PAD, GRIP	
105	3-724-511-01	SHOE, ACCESSORY	
106	3-744-739-01	NUT (10), LINING PLATE	
107	3-744-704-15	LID, CONNECTOR (AEP/UK MODEL)	
	3-744-704-41	LID, CONNECTOR (E/AUS MODEL)	
108	3-744-709-01	LOCK, SLIDE	
109	3-744-717-01	SPRING, LOCK	
110	3-713-790-11	SCREW (M2X5), TAPPING, P3	
111	3-718-233-01	NUT, PLATE	
112	*3-744-754-01	BRACKET, VF	
113	3-742-871-11	SCREW (M2X4)	
114	3-713-790-21	SCREW (M2X6), TAPPING, P3	
115	3-742-871-21	SCREW (M2X3)	
116	3-744-735-01	RETAINER, M	
117	X-3744-723-1	BASE ASSY, SP	
118	1-542-143-11	MICROPHONE (STEREO TYPE)	130
119	X-3744-772-1	RETAINER ASSY, Z	
120	1-572-320-11	SWITCH, PUSH	
121	*1-634-422-11	SW-120 BOARD	
122	*A-7062-333-A	MC-43P BOARD, COMPLETE	
123	*A-7071-215-A	MJ-40P BOARD, COMPLETE	
124	X-3744-716-1	CABINET ASSY, MICROPHONE	111, 125, 126
125	3-719-381-01	SCREW (M2X4)	
126	3-744-744-01	NUT, M PLATE	
127	3-728-266-01	COVER, 2.5 JACK	
128	3-728-267-01	COVER, 3.5 JACK	
129	*3-746-251-01	SHEET, Z	
130	X-2536-719-1	SCREEN ASSY, WINDOW	

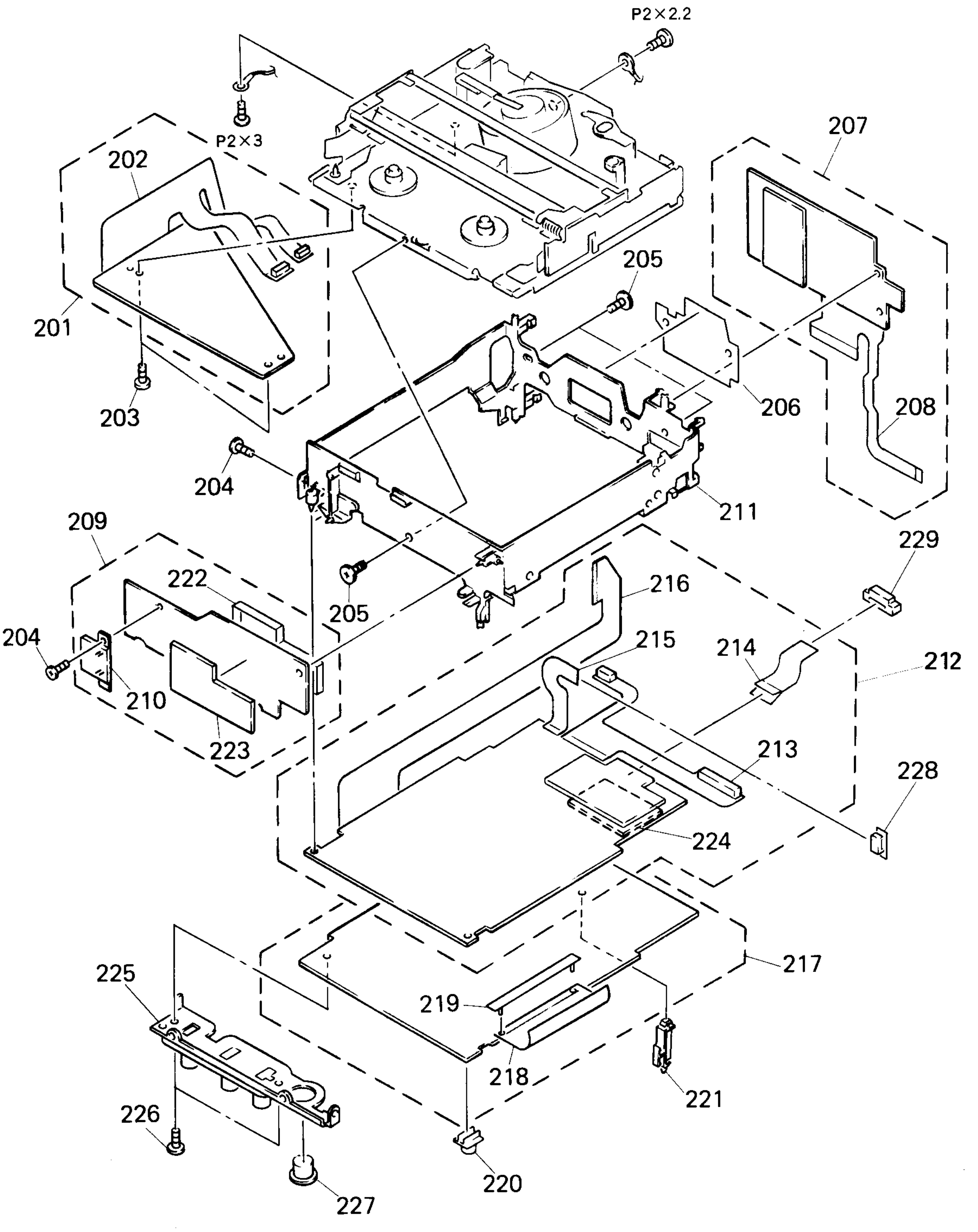
5-4. EVF ASSEMBLY (EVF (M), EVF (C))


164
151
162
171
not supplied
169
167
154
156
not supplied
not supplied
155
152
153
TYPE (M)
172
173
not supplied
168
166
TYPE (C)
STEEL BALL 3
158
not supplied
170
161
not supplied
160
not supplied
165
not supplied
157
159
174
163

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
151	A-7019-243-A	EVF (M) ASSY	152-171
	A-7019-244-A	EVF (C) ASSY	157-173
152	*A-7062-278-A	VF-26P BOARD, COMPLETE	
153	⚠.1-451-310-21	DEFLECTION YOKE (B/W)	
154	⚠.1-546-085-11	CATHODE-RAY TUBE, B/W	
155	3-724-549-01	LOCK, CRT	
156	3-724-570-01	RING, CRT FIXED	
157	X-3744-701-1	CASE ASSY, LOWER, VF	158, 159, 170
158	3-732-012-11	SCREW (M2X5)	
159	3-744-720-11	SCREW (M2X3)	
160	X-3744-703-1	EYE BLOCK ASSY	161
161	3-733-922-01	EYE CUP	
162	1-634-011-11	FP-264 FLEXIBLE BOARD	
163	3-713-790-31	SCREW (M2X8), TAPPING, P3	
164	3-744-705-01	CASE, VF (UPPER)	
165	3-744-712-01	SHOE, VF	
166	3-744-716-01	COVER, FL	
167	3-744-722-01	GUIDE, VF TALLY	
168	3-744-775-01	INSULATOR, VF	
169	3-719-381-01	SCREW (M2X4)	
170	3-302-492-00	SPRING, COMPRESSION	
171	9-911-844-XX	CUSHION, CRT	
172	⚠.1-452-482-11	CRT ASSY (M91JYZ60WB)	
173	*A-7062-279-A	VF-27P BOARD, COMPLETE	
174	*3-704-235-01	LABL, CAUTION (UK MODEL)	

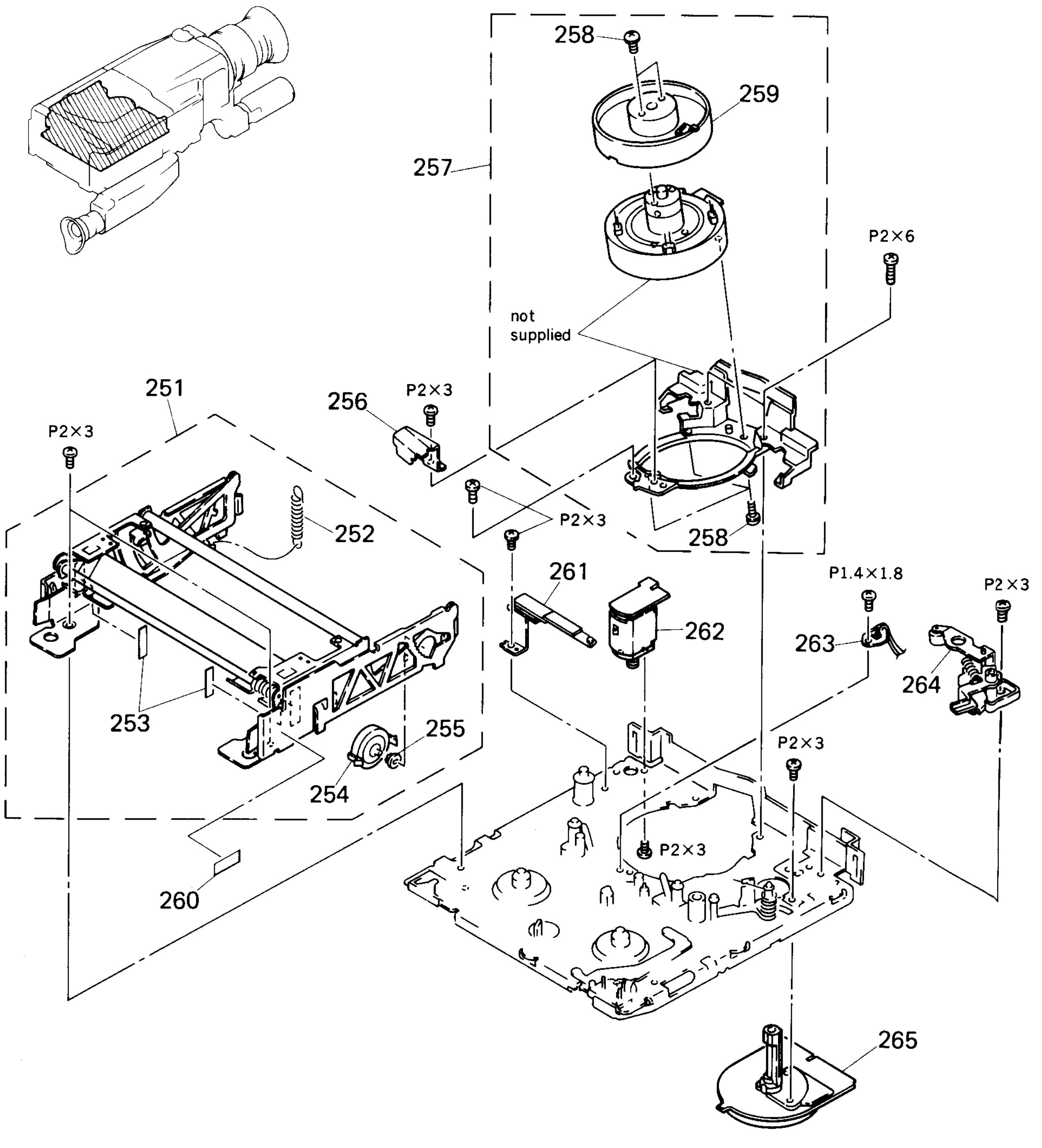
5-5. MAIN BOARDS ASSEMBLIES



No.	Part No.	Description	Remark
201	*A-7062-327-B	CC-33P BOARD, COMPLETE	202
202	1-634-429-11	FP-258 FLEXIBLE BOARD	
203	3-713-790-11	SCREW (M2X5), TAPPING, P3	
204	3-719-381-01	SCREW (M2X4)	
205	3-732-791-01	SCREW (M2X3)	
206	*3-746-201-01	PLATE, SHIELD, AM	
207	*A-7062-328-A	AU-60P BOARD, COMPLETE	208
208	1-634-432-11	FP-261 FLEXIBLE BOARD	
209	*A-7062-324-A	FU-71P BOARD, COMPLETE	210, 222, 223
210	1-537-241-11	TERMINAL BOARD	
211	3-744-779-01	FRAME, MD	
212	*A-7062-326-A	SS-133 BOARD, COMPLETE	213-216, 224
213	1-634-428-11	FP-257 FLEXIBLE BOARD	
214	1-634-427-11	FP-256 FLEXIBLE BOARD	
215	1-634-426-11	FP-255 FLEXIBLE BOARD	
216	1-634-430-11	FP-259 FLEXIBLE BOARD	

No.	Part No.	Description	Remark
217	*A-7062-325-A	VA-62 BOARD, COMPLETE (AEP/UK MODEL)	218, 219
	A-7062-447-A	VA-62E BOARD, COMPLETE (E/AUS MODEL)	218, 219
218	1-634-431-11	FP-260 FLEXIBLE BOARD	
219	X-3744-720-1	HOLDER ASSY, FP	
220	3-744-743-01	KNOB, IO SELECTION (E/AUS MODEL)	
221	3-744-757-01	SUPPORT (IO), C	
222	*X-3744-706-1	CASE ASSY, SHIELD, FU	
223	*X-3744-707-1	LID ASSY, REAR, FU SHIELD	
224	*A-7068-183-A	HR-10P BOARD, COMPLETE	
225	A-7091-210-A	PLATE ASSY, JACK	
226	3-744-720-11	SCREW (M2X3)	
227	1-566-850-31	CONNECTOR, (S) TERMINAL 4P	
228	1-569-346-11	CONNECTOR, FPC (TRANSLATION) 10P	
229	1-569-347-11	CONNECTOR, FPC (TRANSLATION) 13P	

5-6. MECHANICAL ASSEMBLY (1)



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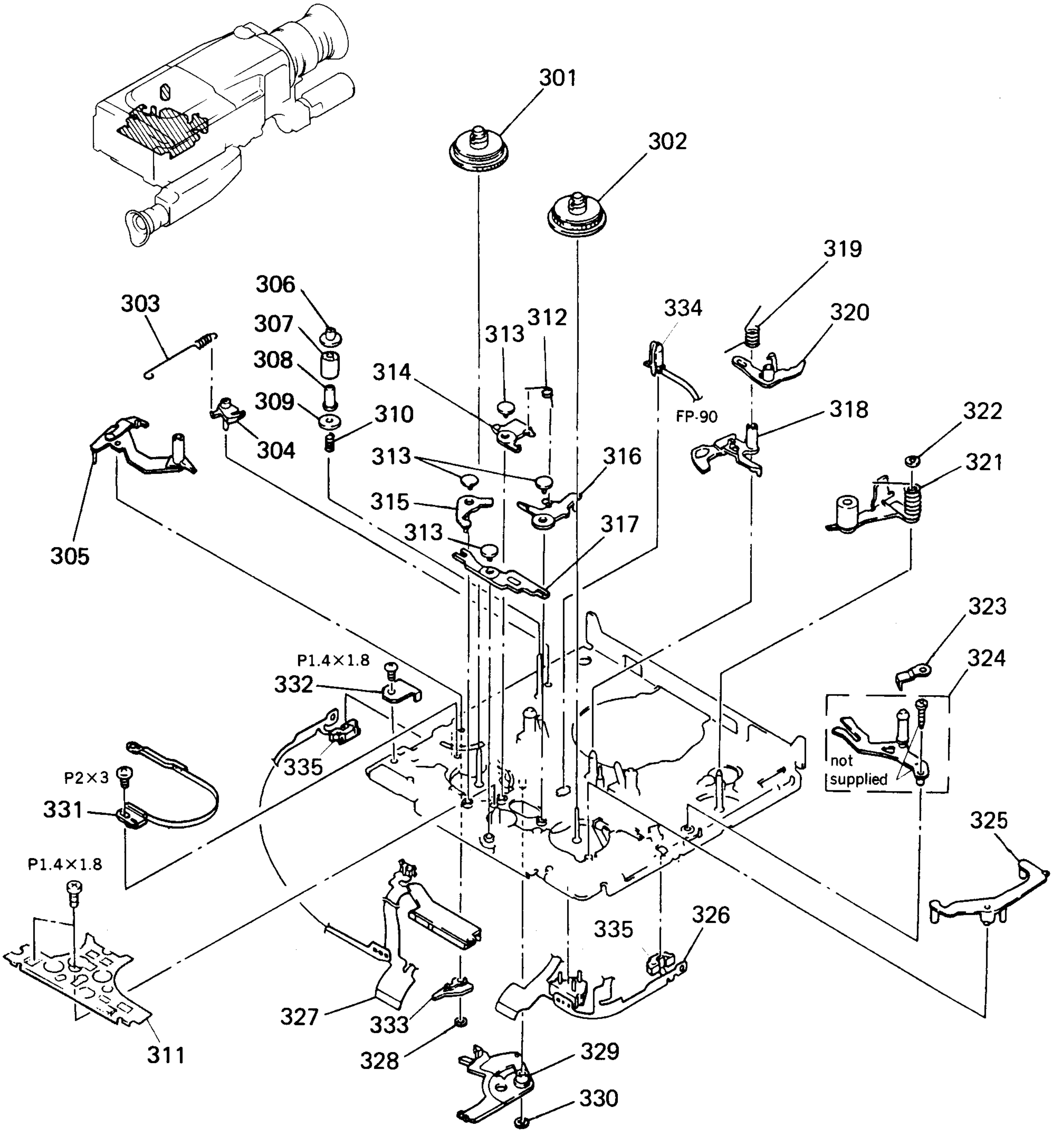
259
257
not supplied
P2×6
251
256
P2×3
P2×3
252
P2×3
258
261
P1.4×1.8
P2×3
262
263
264
253
255
P2×3
254
P2×3
260
265

No.	Part No.	Description	Remark
251	X-3728-873-1	CASSETTE COMPARTMENT ASSY	252-255
252	3-728-825-03	SPRING, TENSION	
253	*3-728-829-01	TAPE	
254	3-728-867-02	DAMPER, OIL	
255	3-728-828-02	GEAR, DAMPER	
256	3-728-868-01	GUARD, GUIDE	
257	A-7048-403-A	DRUM ASSY (DGU-62A-R)	258, 259
258	3-686-493-01	SCREW +P(M2X5)	
259	A-7049-341-A	DRUM ASSY, ROTARY (UPPER) (DGR-52-R)	
260	*3-730-176-11	SHEET, MD	
261	X-3728-864-1	GROUND ASSY, SHAFT	
262	A-7040-208-A	MOTOR ASSY, THREADING	
263	1-808-505-12	SENSOR	
264	A-7040-207-A	ROLLER BLOCK ASSY, HC	
265	8-835-331-01	MOTOR, DC U-22A	

5-7. MECHANICAL ASSEMBLY (2)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302
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312
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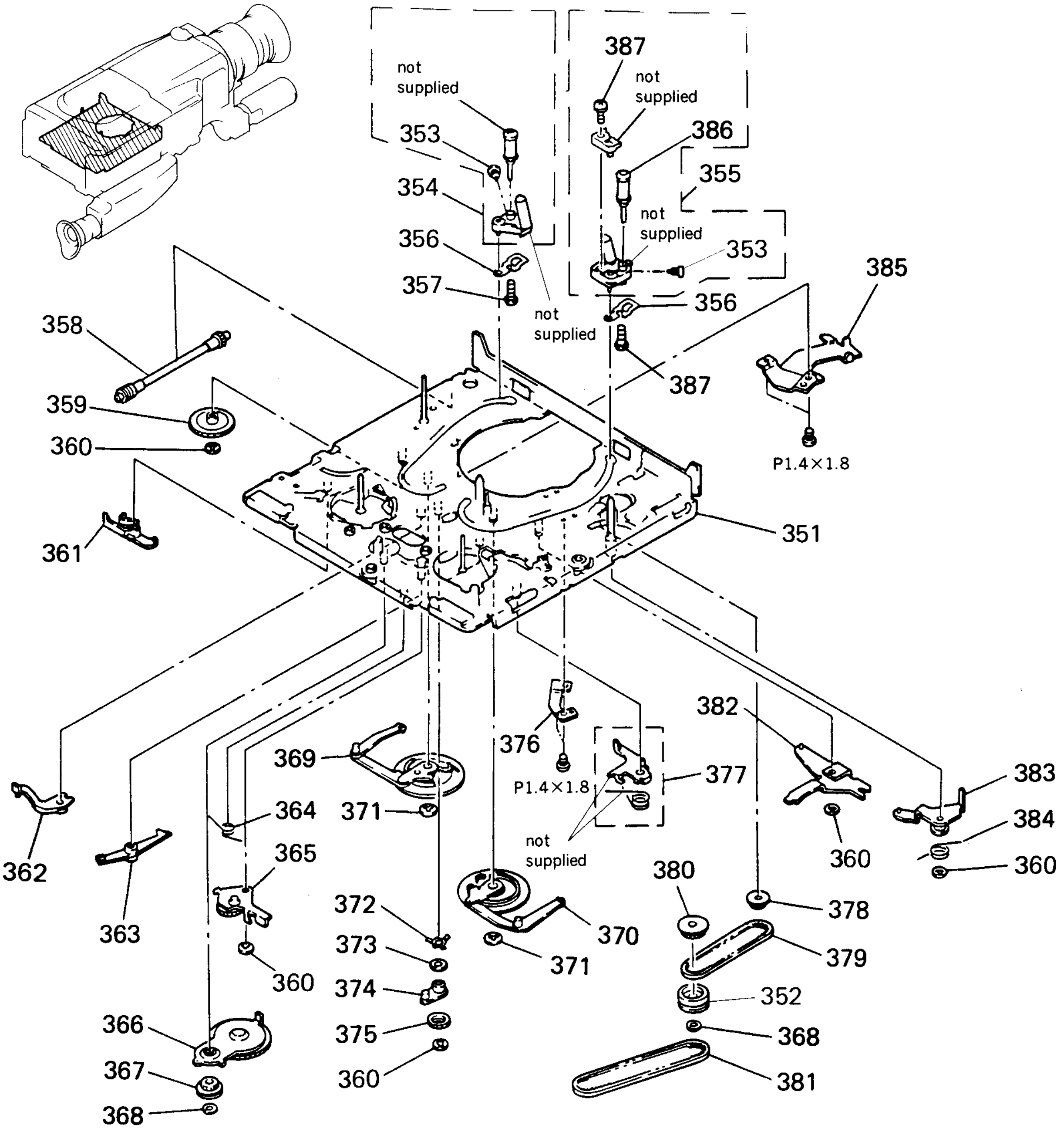
315
316
313
317
334
FP-90
320
318
322
321
323
324
not
supplied
325
P1.4×1.8
332
335
P2×3
331
P1.4×1.8
311
327
333
328
329
330
335
326

No.	Part No.	Description	Remark
301	X-3728-851-1	TABLE ASSY, REEL, S	
302	X-3728-855-1	TABLE ASSY, REEL, T	
303	3-736-414-01	SPRING, TENSION	
304	3-728-855-03	ARM, ADJUSTMENT	
305	X-3728-867-1	ARM ASSY (S), TENSION REGULATOR	
306	3-726-884-01	FLANGE, UPPER, TG2	
307	3-726-883-01	ROLLER, TG2	
308	3-726-885-01	SLEEVE, TG2	
309	3-726-882-02	FLANGE, LOWER, TG2	
310	3-726-886-01	SPRING, COMPRESSION	
311	3-741-195-01	PLATE, BLIND, RK	
312	3-726-866-01	SPRING (ST), TORSION	
313	3-726-858-01	PIN, SHAFT RETAINER	
314	3-728-849-01	BRAKE, S	
315	3-726-852-01	BRAKE, LB	
316	3-728-850-01	BRAKE, T	
317	3-726-853-01	LEVER, LB	
318	3-728-875-01	STOPPER, RK	
319	3-726-864-01	SPRING (RK), TORSION	
320	3-728-852-02	ARM, RK STOPPER	
321	A-7040-219-A	ARM BLOCK ASSY, PINCH	
322	3-669-465-00	WASHER (1.5), STOPPER	
323	3-728-808-01	SPRING, LEAF	
324	X-3728-869-1	ARM ASSY, TG7	
325	3-728-848-01	ARM, LB RELEASE	
326	1-628-061-12	FP-90 FLEXIBLE BOARD	
327	1-628-060-12	FP-89 FLEXIBLE BOARD	
328	3-321-393-11	WASHER, STOPPER	
329	X-3728-863-1	LEVER ASSY, SW	
330	3-726-829-01	WASHER, STOPPER	
331	X-3728-859-1	BAND ASSY, TENSION REGULATOR	
332	3-730-125-01	RETAINER, SW	
333	X-3728-857-1	STOPPER ASSY, TENSION REGULATOR	
334	3-728-837-01	HOLDER, LED	
335	3-728-869-02	HOLDER, SENSOR	

5-8. MECHANICAL ASSEMBLY (3)



387
not supplied
353
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356
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not supplied
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not supplied
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356
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358
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361
P1.4×1.8
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362
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365
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371
372
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374
375
360
376
P1.4×1.8
377
not supplied
370
371
382
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352
368
381
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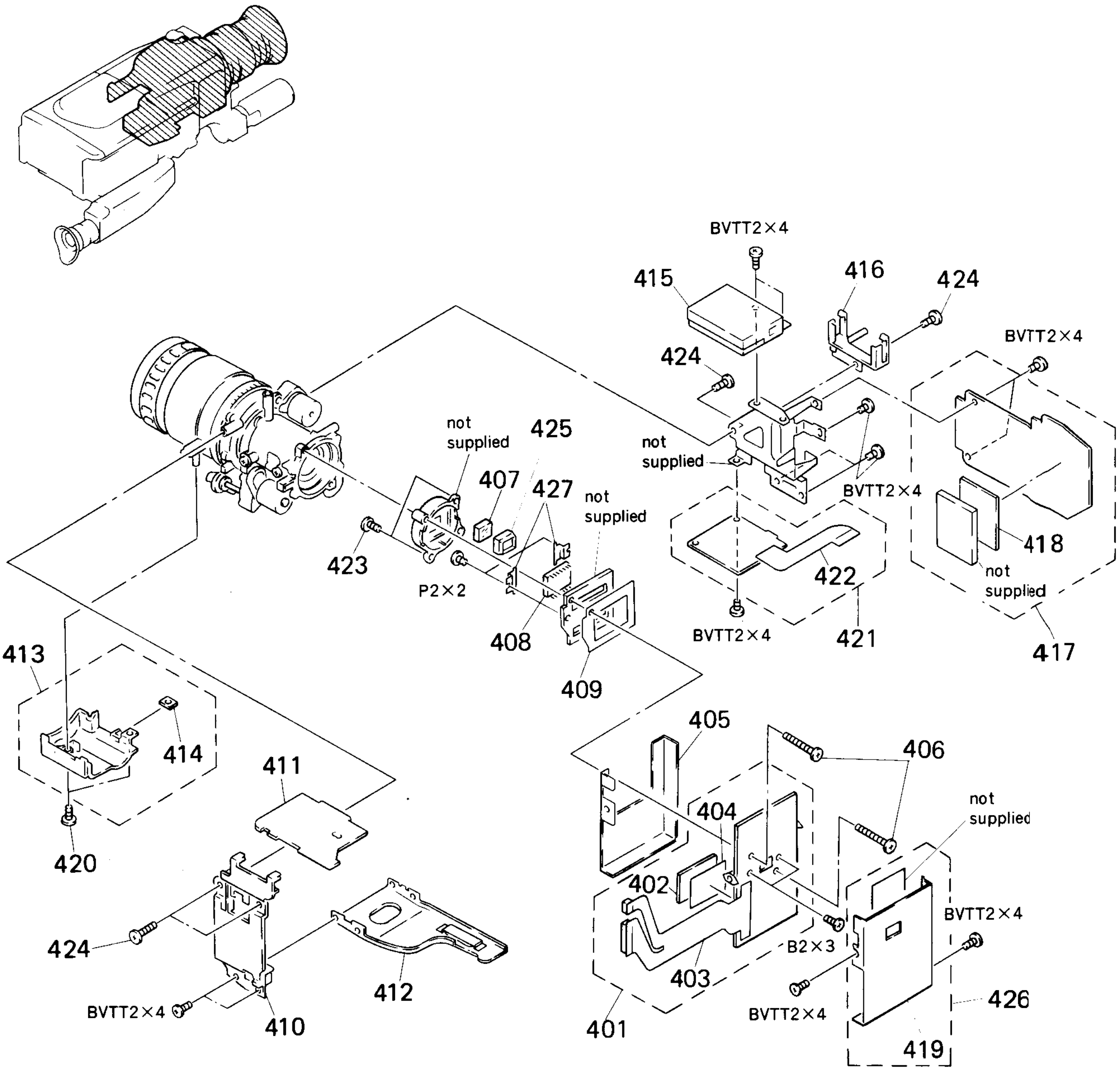
383
384
360

No.	Part No.	Description	Remark
351	X-3728-862-1	CHASSIS ASSY, MECHANICAL	
352	3-741-196-01	PULLEY (LOWER), BELT MIDWAY	
353	3-726-822-01	SCREW (M1.4X2) (STEP), HEAD	
354	A-7040-204-A	COASTER (LEFT) BLOCK ASSY	353
355	A-7040-215-A	COASTER (RIGHT)BLOCK ASSY (N1S)	353, 386, 387
356	3-736-485-01	SPRING, LEAF, COSTER	
357	3-726-830-01	SCREW (M1.4X4) (THREE LOCK)	
358	X-3728-868-1	WORM ASSY	
359	3-744-109-01	GEAR, WHEEL	
360	3-726-829-01	WASHER, STOPPER	
361	3-728-842-01	LEVER, EJECT	
362	3-728-851-01	BRAKE, UL	
363	3-726-854-01	ARM, BRAKE RELEASE	
364	3-726-865-01	SPRING (LB), TORSION	
365	A-7040-225-A	GEAR BLOCK ASSY (N), LB	
366	X-3728-866-1	GEAR ASSY, RK	
367	X-3728-858-1	GEAR ASSY, RC	
368	3-321-393-11	WASHER, STOPPER	
369	X-3728-842-1	GEAR (LEFT) ASSY, DRIVE	
370	X-3728-843-1	GEAR (RIGHT) ASSY, DRIVE	
371	3-669-465-00	WASHER (1.5), STOPPER	
372	3-726-867-01	SPRING, LEAF	
373	3-701-436-21	WASHER, POLYEHTHYLENE	
374	3-726-857-02	ARM, UL	
375	3-726-856-02	GEAR, UL	
376	*3-726-805-01	REINFORCEMENT (TT)	
377	X-3726-808-2	BRAKE ASSY, TS	
378	X-3726-805-1	GEAR ASSY, JOINT	
379	3-728-866-11	BELT (S), TIMING	
380	X-3726-838-1	PULLEY (UPPER) ASSY, MIDWAY	
381	3-741-197-01	BELT (L), TIMING	
382	X-3726-804-1	LEVER ASSY, THREADING	
383	X-3726-824-1	ARM ASSY, PINCH SUB	
384	3-726-895-01	SPRING	
385	X-3726-841-1	REINFORCEMENT (SS) ASSY	
386	X-3728-808-1	ROLLER ASSY (U) (SUS), GUIDE	
387	3-736-473-01	SCREW (M2X0.25) (THREE LOCK)	

5-9. CARERA BLOCK ASSEMBLY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424
BVTT2×4
424
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not supplied
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not supplied
BVTT2×4
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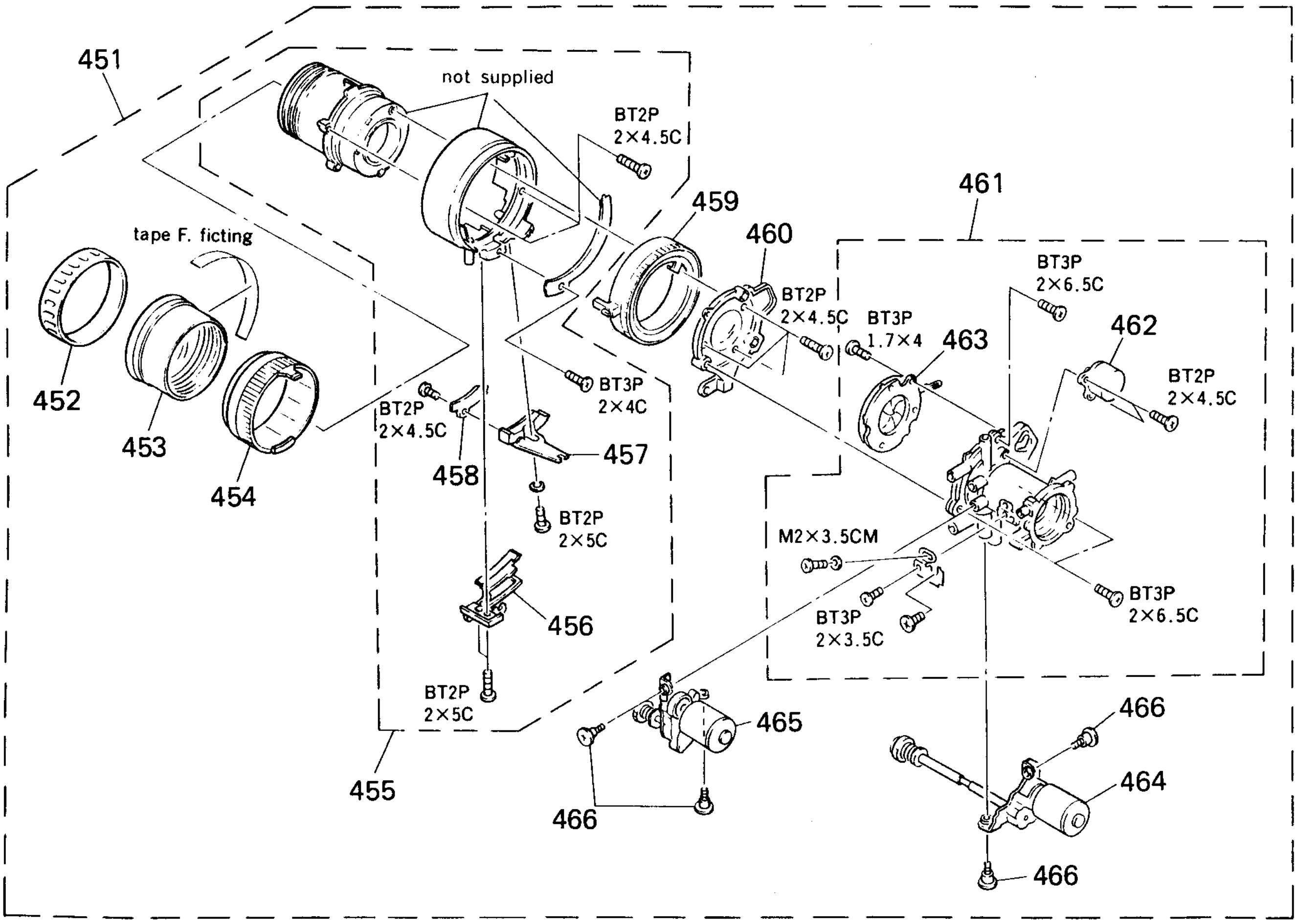
423
P2×2
422
not supplied
BVTT2×4
421
417
413
408
409
414
405
406
411
420
not supplied
404
402
BVTT2×4
424
B2×3
403
426
412
BVTT2×4
BVTT2×4
410
401
419

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

※ For replacement of CCD imager, CD-20P board, complete and DT-77P board, complete read carefully the CAUTIONS FOR REPLACEMENT OF CCD IMAGER on page 69.

No.	Part No.	Description	Remark
401	*A-7062-329-A	CD-20P BOARD, COMPLETE	402-404
402	※A-7068-173-A	DT-77P BOARD, COMPLETE (HIC)	
403	1-634-435-11	FP-265 FLEXIBLE BOARD	
404	*X-3739-811-1	PLATE ASSY, SHIELD, CD	
405	*X-3744-702-1	CASE (MAIN) ASSY, SHIELD, C	
406	3-335-640-51	SCREW (M2X16)	
407	1-547-381-12	FILTER BLOCK, OPTICAL	
408	8-752-602-90	IC ICX039AK-1 (IC101)	
409	*3-725-180-01	SHEET, INSULATING, CCD HOLDER	
410	*3-744-771-01	FRAME (A), C	
411	*A-7071-214-A	FC-28P BOARD, COMPLETE	
412	X-3744-718-1	TRIPOD ASSY	
413	X-3744-705-1	COVER ASSY, GEAR	414
414	3-718-233-01	NUT, PLATE	
415	⚠1-466-230-21	CONVERTER UNIT, D/D	
416	*3-744-765-01	FRAME (C), C	
417	*A-7062-331-A	VC-67P BOARD, COMPLETE	418
418	*A-7068-180-A	MX-12AP BOARD, COMPLETE	
419	3-744-702-01	LID, C SHIELD CASE	
420	3-746-217-01	SCREW, TAPPING(B), SPECIAL HEAD	
421	*A-7062-330-A	AF-54P BOARD, COMPLETE	422
422	1-634-436-11	FP-266 FLEXIBLE BOARD	
423	3-738-519-11	SCREW (M2X3), +B	
424	3-727-903-11	SCREW (2X5), TAPPING, +B	
425	*3-725-177-01	RUBBER, SEAL	
426	*X-3744-763-1	LID ASSY, C SHIELD CASE	429
427	*3-725-175-01	STOPPER, CCD	

5-10. ZOOM LENS ASSEMBLY (VCL-8508×G)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not supplied
BT2P
2×4.5C
459
461
460
BT2P
2×4.5C
BT3P
1.7×4
463
BT3P
2×6.5C
462
BT2P
2×4.5C
tape F. ficting
452
453
454
BT3P
2×4C
BT2P
2×4.5C
457
458
BT2P
2×5C
456
M2×3.5CM
BT3P
2×3.5C
BT3P
2×6.5C
BT2P
2×5C
455
465
466
466
464
466

No.	Part No.	Description	Remark
451	1-547-413-11	LENS, ZOOM (VCL-8508XG)	
452	3-707-926-01	RUBBER, FOCUS	
453	3-707-927-01	RING UNIT, F	
454	3-707-928-01	RING, (F) SCALE	
455	3-707-929-01	ZOOM UNIT	
456	3-707-930-01	BEARING, F	
457	3-707-931-01	HOLDER, PC BOARD	
458	3-707-932-01	SENSOR ASSY, F	
459	3-707-933-01	RING ASSY, ZOOM	
460	3-707-934-01	FRAME, MIDWAY	
461	3-707-935-01	REAR BLOCK ASSY	
462	3-707-816-01	METER ASSY, EE	
463	3-707-936-01	IRIS UNIT	
464	3-707-937-01	MOTOR ASSY, AF GEAR	
465	3-707-818-01	MOTOR ASSY, PZ GEAR	
466	3-707-501-01	SCREW, (Z) MOTOR FITTING	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
	*A-7062-325-A	VA-62 BOARD, COMPLETE (AEP/UK MODEL)	
		**********************	
	*A-7062-447-A	VA-62 BOARD, COMPLETE (E/AUS MODEL)	
		**********************	
		(Ref.No 1,000 Series)	
	1-566-850-31	CONNECTOR, (S)TERMINAL 4P(S VIDEO)(J650)	
	1-569-556-11	JACK (VIDEO/AUDIO) (J651)	
	1-634-431-11	FP-260 FLEXIBLE BOARD	
	3-719-381-01	SCREW (M2X4)	
	3-744-791-01	CASE, SHIELD, VA	
	*3-744-792-01	LID, REAR, VA SHIELD	
	*3-744-799-01	CASE, SHIELD, FL	
	7-627-553-47	SCREW, PRECISION +P 2X4	
		CAPACITOR	
C415	1-128-003-11	ELECT CHIP 22MF 20%	4V
C416	1-128-004-11	ELECT CHIP 10MF 20%	16V
C417	1-128-004-11	ELECT CHIP 10MF 20%	16V
C418	1-128-004-11	ELECT CHIP 10MF 20%	16V
C424	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C425	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C426	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C427	1-128-004-11	ELECT CHIP 10MF 20%	16V
C428	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C430	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C435	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C436	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C437	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C439	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C448	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C449	1-162-952-11	CERAMIC CHIP 82PF 5%	50V
C450	1-162-947-11	CERAMIC CHIP 33PF 5%	50V
C451	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C461	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C462	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C464	1-164-227-11	CERAMIC CHIP 0.022MF 10%	25V
C465	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C466	1-162-995-11	CERAMIC CHIP 0.022MF	50V
C467	1-162-947-11	CERAMIC CHIP 33PF 5%	50V
C468	1-162-954-11	CERAMIC CHIP 120PF 5%	50V
C470	1-162-959-11	CERAMIC CHIP 330PF 5%	50V
C472	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C551	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C555	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C556	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C557	1-135-181-21	TANTAL. CHIP 4.7MF 20%	6.3V
C558	1-135-181-21	TANTAL. CHIP 4.7MF 20%	6.3V
C559	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C562	1-124-778-00	ELECT CHIP 22MF 20%	6.3V
C563	1-124-778-00	ELECT CHIP 22MF 20%	6.3V
C564	1-124-778-00	ELECT CHIP 22MF 20%	6.3V
C565	1-135-181-21	TANTAL. CHIP 4.7MF 20%	6.3V
C566	1-124-778-00	ELECT CHIP 22MF 20%	6.3V
C567	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C568	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C601	1-135-201-11	TANTAL. CHIP 10MF 20%	4V
C602	1-135-201-11	TANTAL. CHIP 10MF 20%	4V
C603	1-135-181-21	TANTAL. CHIP 4.7MF 20%	6.3V
C604	1-126-205-11	ELECT CHIP 47MF 20%	6.3V
C605	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C606	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C607	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C608	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C611	1-135-201-11	TANTAL. CHIP 10MF 20%	4V
C612	1-135-201-11	TANTAL. CHIP 10MF 20%	4V
C650	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C651	1-128-004-11	ELECT CHIP 10MF 20%	16V
C652	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C653	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C654	1-126-205-11	ELECT CHIP 47MF 20%	6.3V
C655	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C656	1-135-180-21	TANTAL. CHIP 3.3MF 20%	4V
C657	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C658	1-128-004-11	ELECT CHIP 10MF 20%	16V
C659	1-135-180-21	TANTAL. CHIP 3.3MF 20%	4V
C660	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C662	1-164-222-11	CERAMIC CHIP 0.22MF	25V
C663	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C664	1-128-004-11	ELECT CHIP 10MF 20%	16V
C665	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C666	1-163-023-00	CERAMIC CHIP 0.015MF 10%	50V
C667	1-135-157-21	TANTAL. CHIP 10MF 20%	6.3V
C668	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C669	1-162-963-11	CERAMIC CHIP 680PF 10%	50V
C670	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C671	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C672	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C673	1-126-425-11	ELECT 10MF 20%	10V
C673	1-128-004-11	ELECT CHIP 10MF 20%	16V
C674	1-126-207-11	ELECT CHIP 33MF 20%	4V
C675	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C676	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C681	1-162-951-11	CERAMIC CHIP 68PF 5%	50V
C685	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C686	1-163-121-00	CERAMIC CHIP 150PF 5%	50V
C687	1-163-121-00	CERAMIC CHIP 150PF 5%	50V
C688	1-163-131-00	CERAMIC CHIP 390PF 5%	50V
C689	1-163-129-00	CERAMIC CHIP 330PF 5%	50V
C690	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C691	1-126-154-11	ELECT 47MF 20%	6.3V
C692	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C695	1-162-969-11	CERAMIC CHIP 0.0068MF 10%	25V
C696	1-135-091-00	TANTAL. CHIP 1MF 20%	16V
C697	1-135-091-00	TANTAL. CHIP 1MF 20%	16V
C698	1-135-087-21	TANTAL. CHIP 0.68MF 20%	20V

Ref.No	Part No.	Description		Remark
C699	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C700	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C701	1-128-004-11	ELECT CHIP 10MF	20%	16V
C702	1-162-941-11	CERAMIC CHIP 10PF	0.5PF	50V
C703	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C705	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C706	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C707	1-162-944-11	CERAMIC CHIP 18PF	5%	50V
C708	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C709	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C710	1-162-951-11	CERAMIC CHIP 68PF	5%	50V
C712	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C713	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C714	1-163-009-11	CERAMIC CHIP 0.001MF		50V
C715	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C716	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C717	1-162-952-11	CERAMIC CHIP 82PF	5%	50V
C718	1-136-015-00	CERAMIC CHIP 0.0033MF		50V
C719	1-162-943-11	CERAMIC CHIP 15PF	5%	50V
C720	1-126-199-11	ELECT CHIP 6.8MF	20%	35V
C721	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C722	1-163-118-00	CERAMIC CHIP 110PF	5%	50V
C723	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C724	1-126-601-11	ELECT CHIP 2.2MF	20%	50V
C725	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C726	1-164-145-11	CERAMIC CHIP 390PF	5%	50V
C727	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C728	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C729	1-126-603-11	ELECT CHIP 4.7MF	20%	35V
C730	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C731	1-128-013-11	ELECT CHIP 1MF	20%	50V
C733	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C734	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C735	1-162-936-11	CERAMIC CHIP 5PF	0.25PF	50V
C736	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C737	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C738	1-162-937-11	CERAMIC CHIP 6PF	0.5PF	50V
C739	1-162-943-11	CERAMIC CHIP 15PF	5%	50V
C741	1-162-938-11	CERAMIC CHIP 7PF	0.5PF	50V
C742	1-162-941-11	CERAMIC CHIP 10PF	0.5PF	50V
C743	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C745	1-162-942-11	CERAMIC CHIP 12PF	5%	50V
C746	1-162-998-11	CERAMIC CHIP 22PF	5%	50V
C747	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C748	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C749	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C750	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C751	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C752	1-126-431-61	ELECT 4.7MF	20%	16V
C753	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C754	1-164-436-91	CERAMIC CHIP 12PF	5%	50V
C755	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C756	1-163-035-00	CERAMIC CHIP 0.047MF		50V

Ref.No	Part No.	Description		Remark
C757	1-162-934-11	CERAMIC CHIP 3PF	0.25PF	50V
C758	1-162-944-11	CERAMIC CHIP 18PF	5%	50V
C759	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C760	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C761	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C763	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C764	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C765	1-128-004-11	ELECT CHIP 10MF	20%	16V
C766	1-126-245-11	ELECT 330MF	20%	6.3V
C767	1-128-006-11	ELECT CHIP 4.7MF	20%	25V
C768	1-126-607-11	ELECT CHIP 47MF	20%	4V
C769	1-128-004-11	ELECT CHIP 10MF	20%	16V
C771	1-128-003-11	ELECT CHIP 22MF	20%	4V
C772	1-162-941-11	CERAMIC CHIP 10PF	0.5PF	50V
C774	1-162-944-11	CERAMIC CHIP 18PF	5%	50V
C775	1-162-954-11	CERAMIC CHIP 120PF	5%	50V
C776	1-126-155-11	ELECT 100MF	20%	6.3V
C777	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C778	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C779	1-162-958-11	CERAMIC CHIP 270PF	5%	50V
C780	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C781	1-162-944-11	CERAMIC CHIP 18PF	5%	50V
C782	1-162-943-11	CERAMIC CHIP 15PF	5%	50V
C783	1-128-003-11	ELECT CHIP 22MF	20%	4V
C784	1-128-004-11	ELECT CHIP 10MF	20%	16V
C785	1-126-607-11	ELECT CHIP 47MF	20%	4V
C786	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C787	1-128-004-11	ELECT CHIP 10MF	20%	16V
C788	1-128-004-11	ELECT CHIP 10MF	20%	16V
C789	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C790	1-162-938-11	CERAMIC CHIP 7PF	0.5PF	50V
C794	1-164-346-11	CERAMIC CHIP 1MF		16V
C796	1-128-008-11	ELECT CHIP 3.3MF	20%	35V
C797	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C798	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C799	1-128-008-11	ELECT CHIP 3.3MF	20%	35V
C800	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C801	1-164-344-91	CERAMIC CHIP 0.068MF	10%	25V
C802	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C803	1-128-008-11	ELECT CHIP 3.3MF	20%	35V
C804	1-128-004-11	ELECT CHIP 10MF	20%	16V
C805	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C806	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C808	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C809	1-164-346-11	CERAMIC CHIP 1MF		16V
C811	1-128-008-11	ELECT CHIP 3.3MF	20%	35V
C812	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C813	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C814	1-128-008-11	ELECT CHIP 3.3MF	20%	35V
C815	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C816	1-128-004-11	ELECT CHIP 10MF	20%	16V
C817	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C818	1-128-008-11	ELECT CHIP 3.3MF	20%	35V

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description		Remark
C819	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C821	1-162-947-11	CERAMIC CHIP 33PF	5%	50V
C824	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C826	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C827	1-128-004-11	ELECT CHIP 10MF	20%	16V
C828	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C829	1-128-004-11	ELECT CHIP 10MF	20%	16V
C830	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C831	1-126-425-11	ELECT 10MF	20%	10V
C832	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C833	1-128-004-11	ELECT CHIP 10MF	20%	16V
C836	1-128-004-11	ELECT CHIP 10MF	20%	16V
C837	1-128-006-11	ELECT CHIP 4.7MF	20%	25V
C838	1-126-245-11	ELECT 330MF	20%	6.3V
C839	1-126-607-11	ELECT CHIP 47MF	20%	4V
C840	1-128-004-11	ELECT CHIP 10MF	20%	16V
C841	1-128-004-11	ELECT CHIP 10MF	20%	16V
C842	1-128-004-11	ELECT CHIP 10MF	20%	16V
C843	1-126-607-11	ELECT CHIP 47MF	20%	4V
C844	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C845	1-162-952-11	CERAMIC CHIP 82PF	5%	50V
C848	1-128-004-11	ELECT CHIP 10MF	20%	16V
C850	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C851	1-162-952-11	CERAMIC CHIP 82PF	5%	50V
C856	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C857	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C858	1-126-245-11	ELECT 330MF	20%	6.3V
C859	1-128-004-11	ELECT CHIP 10MF	20%	16V
C860	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C861	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C862	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C863	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C864	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C865	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C867	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C869	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C870	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C871	1-128-004-11	ELECT CHIP 10MF	20%	16V
C872	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C873	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C875	1-128-003-11	ELECT CHIP 22MF	20%	4V
C876	1-128-004-11	ELECT CHIP 10MF	20%	16V
C878	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C880	1-128-003-11	ELECT CHIP 22MF	20%	4V
C881	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C890	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C892	1-162-952-11	CERAMIC CHIP 82PF	5%	50V

FILTER

Ref.No	Part No.	Description	Remark
CF650	1-577-162-11	FILTER, CERAMIC	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN551	1-568-801-21	CONNECTOR, FPC (ZIF) 24P	
CN552	*1-565-875-11	PIN, CONNECTOR (PC BOARD) 3P	
CN650	*1-565-876-11	PIN, CONNECTOR (PC BOARD) 4P	

DIODE

Ref.No	Part No.	Description	Remark
D410	8-719-941-09	DIODE DAP202U	
D415	8-719-421-30	DIODE MA141A	
D417	8-719-941-86	DIODE DAN202U	
D419	8-719-941-09	DIODE DAP202U	
D420	8-719-941-86	DIODE DAN202U	
D422	8-719-941-86	DIODE DAN202U	
D423	8-719-941-86	DIODE DAN202U	
D427	8-719-941-86	DIODE DAN202U	
D428	8-719-941-86	DIODE DAN202U	
D429	8-719-941-86	DIODE DAN202U	
D432	8-719-941-86	DIODE DAN202U	
D434	8-719-941-09	DIODE DAP202U	
D435	8-719-941-86	DIODE DAN202U	
D436	8-719-941-86	DIODE DAN202U	
D437	8-719-941-86	DIODE DAN202U	
D551	8-719-404-46	DIODE MA110	
D552	8-719-941-86	DIODE DAN202U	
D553	8-719-941-86	DIODE DAN202U	
D554	8-719-404-46	DIODE MA110	
D650	8-719-941-86	DIODE DAN202U	
D651	8-719-941-86	DIODE DAN202U	
D652	8-719-941-86	DIODE DAN202U	
D653	8-719-941-86	DIODE DAN202U	
D654	8-719-941-86	DIODE DAN202U	
D655	8-719-800-76	DIODE 1SS226	
D656	8-719-941-86	DIODE DAN202U	
D657	8-719-800-76	DIODE 1SS226	
D658	8-719-941-86	DIODE DAN202U	
D659	8-719-941-86	DIODE DAN202U	
D661	8-719-941-86	DIODE DAN202U	
D662	8-719-951-22	DIODE IMN10	
D663	8-719-941-86	DIODE DAN202U	
D664	8-719-941-86	DIODE DAN202U	
D667	8-719-941-86	DIODE DAN202U	
D669	8-719-977-22	DIODE DTZ9.1	
D670	8-719-977-22	DIODE DTZ9.1	
D671	8-719-977-22	DIODE DTZ9.1	
D672	8-719-977-22	DIODE DTZ9.1	
D673	8-719-800-76	DIODE 1SS226	
D674	8-719-977-22	DIODE DTZ9.1	
D675	8-719-977-22	DIODE DTZ9.1	
D676	8-719-977-22	DIODE DTZ9.1	
D677	8-719-977-22	DIODE DTZ9.1	
D678	8-719-977-22	DIODE DTZ9.1	
D679	8-719-977-22	DIODE DTZ9.1	
D680	8-719-977-22	DIODE DTZ9.1	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
D681	8-719-977-22	DIODE DTZ9.1	
D690	8-719-941-86	DIODE DAN202U	
		FILTER	
FL650	1-236-186-11	FILTER, BAND PASS	
FL651	1-236-849-21	FILTER, BAND PASS	
FL652	1-236-850-21	FILTER, BAND PASS	
FL653	1-415-729-21	DELAY LINE, LC (Y)	
FL654	1-415-764-21	DELAY LINE, LC	
FL655	1-236-848-21	FILTER, LOW PASS	
FL656	1-236-757-21	FILTER, LOW PASS (C)	
FL657	1-236-775-11	FILTER, LOW PASS (DEM)	
FL658	1-236-774-11	FILTER, LOW PASS (Y)	
		IC	
IC416	8-759-710-09	IC NJM2233AM	
IC551	8-759-009-07	IC MC14053BF	
IC553	8-759-998-98	IC LM358D	
IC554	8-759-932-54	IC MC14066BF	
IC555	8-759-701-02	IC NJM2073M	
IC650	8-752-036-19	IC CXA1207R	
IC651	8-752-036-20	IC CXA1208R	
IC652	8-759-605-61	IC CXA1203N	
IC653	8-759-925-60	IC BA401	
IC654	8-752-009-51	IC CX20095A	
IC656	8-759-320-76	IC HA118070FP	
IC657	8-752-333-24	IC CXL1506M	
IC658	8-752-333-24	IC CXL1506M	
IC659	8-759-710-29	IC NJM2235M	
IC660	8-759-710-07	IC NJM2234M	
IC661	8-759-710-07	IC NJM2234M	
IC662	8-759-009-22	IC MC14094BF	
IC663	8-759-710-29	IC NJM2235M	
		COIL	
L443	1-412-058-11	INDUCTOR CHIP 10UH	
L444	1-410-379-31	INDUCTOR CHIP 6.8UH	
L445	1-410-385-11	INDUCTOR CHIP 22UH	
L446	1-410-381-11	INDUCTOR CHIP 10UH	
L447	1-410-379-21	INDUCTOR CHIP 6.8UH	
L448	1-410-389-31	INDUCTOR CHIP 47UH	
L650	1-410-391-11	INDUCTOR CHIP 68UH	
L653	1-410-385-11	INDUCTOR CHIP 22UH	
L654	1-410-390-11	INDUCTOR CHIP 56UH	
L657	1-410-386-11	INDUCTOR CHIP 27UH	
L658	1-410-393-11	INDUCTOR CHIP 100UH	
L659	1-410-655-31	INDUCTOR CHIP 120UH	
L660	1-410-393-11	INDUCTOR CHIP 100UH	
L661	1-410-656-11	INDUCTOR CHIP 150UH	
L662	1-410-393-11	INDUCTOR CHIP 100UH	
L663	1-410-381-11	INDUCTOR CHIP 10UH	
L664	1-410-383-31	INDUCTOR CHIP 15UH	
L665	1-410-386-11	INDUCTOR CHIP 27UH	
L666	1-410-384-31	INDUCTOR CHIP 18UH	
L667	1-408-797-11	INDUCTOR CHIP 470UH	
L668	1-408-797-11	INDUCTOR CHIP 470UH	
L669	1-410-384-31	INDUCTOR CHIP 18UH	
L670	1-410-389-31	INDUCTOR CHIP 47UH	
L671	1-410-393-11	INDUCTOR CHIP 100UH	
L673	1-410-385-11	INDUCTOR CHIP 22UH	
L674	1-410-382-31	INDUCTOR CHIP 12UH	
L675	1-410-383-31	INDUCTOR CHIP 15UH	
L676	1-410-380-31	INDUCTOR CHIP 8.2UH	
L677	1-410-379-21	INDUCTOR CHIP 6.8UH	
L678	1-410-388-21	INDUCTOR CHIP 39UH	
L679	1-410-386-11	INDUCTOR CHIP 27UH	
L681	1-412-058-11	INDUCTOR CHIP 10UH	
L682	1-410-389-31	INDUCTOR CHIP 47UH	
L683	1-412-058-11	INDUCTOR CHIP 10UH	
L684	1-410-389-31	INDUCTOR CHIP 47UH	
L685	1-410-389-31	INDUCTOR CHIP 47UH	
L686	1-410-385-11	INDUCTOR CHIP 22UH	
L687	1-410-387-11	INDUCTOR CHIP 33UH	
L688	1-410-378-11	INDUCTOR CHIP 5.6UH	
L689	1-410-389-31	INDUCTOR CHIP 47UH	
L690	1-410-369-11	INDUCTOR CHIP 1UH	
L691	1-410-389-31	INDUCTOR CHIP 47UH	
L692	1-410-655-31	INDUCTOR CHIP 120UH	
		TRANSISTOR	
Q411	8-729-905-23	TRANSISTOR 2SA1576-R	
Q415	8-729-905-23	TRANSISTOR 2SA1576-R	
Q416	8-729-905-35	TRANSISTOR 2SC4081-R	
Q417	8-729-905-12	TRANSISTOR DTA144EU	
Q418	8-729-905-35	TRANSISTOR 2SC4081-R	
Q421	8-729-905-23	TRANSISTOR 2SA1576-R	
Q422	8-729-905-18	TRANSISTOR DTC144EU	
Q423	8-729-905-35	TRANSISTOR 2SC4081-R	
Q426	8-729-905-35	TRANSISTOR 2SC4081-R	
Q427	8-729-905-35	TRANSISTOR 2SC4081-R	
Q428	8-729-905-XX	TRANSISTOR DTC114TU	
Q429	8-729-905-35	TRANSISTOR 2SC4081-R	
Q430	8-729-905-18	TRANSISTOR DTC144EU	
Q431	8-729-905-23	TRANSISTOR 2SA1576-R	
Q432	8-729-905-23	TRANSISTOR 2SA1576-R	
Q433	8-729-905-35	TRANSISTOR 2SC4081-R	
Q434	8-729-905-23	TRANSISTOR 2SA1576-R	
Q439	8-729-905-12	TRANSISTOR DTA144EU	
Q440	8-729-905-35	TRANSISTOR 2SC4081-R	
Q442	8-729-905-18	TRANSISTOR DTC144EU	
Q443	8-729-905-18	TRANSISTOR DTC144EU	
Q444	8-729-905-35	TRANSISTOR 2SC4081-R	
Q446	8-729-905-35	TRANSISTOR 2SC4081-R	
Q447	8-729-905-12	TRANSISTOR DTA144EU	
Q448	8-729-905-18	TRANSISTOR DTC144EU	
Q452	8-729-905-18	TRANSISTOR DTC144EU	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
Q456	8-729-905-18	TRANSISTOR DTC144EU	
Q469	8-729-905-18	TRANSISTOR DTC144EU	
Q490	8-729-905-35	TRANSISTOR 2SC4081-R	
Q491	8-729-905-12	TRANSISTOR DTA144EU	
Q493	8-729-905-12	TRANSISTOR DTA144EU	
Q494	8-729-905-35	TRANSISTOR 2SC4081-R	
Q496	8-729-905-35	TRANSISTOR 2SC4081-R	
Q497	8-729-905-18	TRANSISTOR DTC144EU	
Q498	8-729-905-18	TRANSISTOR DTC144EU	
Q551	8-729-905-23	TRANSISTOR 2SA1576-R	
Q552	8-729-905-23	TRANSISTOR 2SA1576-R	
Q553	8-729-905-35	TRANSISTOR 2SC4081-R	
Q554	8-729-905-35	TRANSISTOR 2SC4081-R	
Q555	8-729-905-35	TRANSISTOR 2SC4081-R	
Q556	8-729-905-35	TRANSISTOR 2SC4081-R	
Q557	8-729-905-18	TRANSISTOR DTC144EU	
Q558	8-729-905-12	TRANSISTOR DTA144EU	
Q559	8-729-905-23	TRANSISTOR 2SA1576-R	
Q560	8-729-905-18	TRANSISTOR DTC144EU	
Q561	8-729-907-26	TRANSISTOR IMX1	
Q562	8-729-904-07	TRANSISTOR FMG2	
Q603	8-729-905-35	TRANSISTOR 2SC4081-R	
Q606	8-729-902-93	TRANSISTOR FMG4	
Q607	8-729-922-94	TRANSISTOR DTC143TU	
Q608	8-729-905-23	TRANSISTOR 2SA1576-R	
Q643	8-729-905-23	TRANSISTOR 2SA1576-R	
Q645	8-729-905-18	TRANSISTOR DTC144EU	
Q647	8-729-905-18	TRANSISTOR DTC144EU	
Q648	8-729-905-12	TRANSISTOR DTA144EU	
Q649	8-729-905-18	TRANSISTOR DTC144EU	
Q653	8-729-905-18	TRANSISTOR DTC144EU	
Q655	8-729-905-12	TRANSISTOR DTA144EU	
Q657	8-729-905-35	TRANSISTOR 2SC4081-R	
Q658	8-729-905-35	TRANSISTOR 2SC4081-R	
Q659	8-729-905-35	TRANSISTOR 2SC4081-R	
Q660	8-729-905-35	TRANSISTOR 2SC4081-R	
Q661	8-729-905-12	TRANSISTOR DTA144EU	
Q662	8-729-905-12	TRANSISTOR DTA144EU	
Q665	8-729-905-45	TRANSISTOR DTA143EU	
Q666	8-729-905-23	TRANSISTOR 2SA1576-R	
Q667	8-729-905-18	TRANSISTOR DTC144EU	
Q668	8-729-905-35	TRANSISTOR 2SC4081-R	
Q669	8-729-905-12	TRANSISTOR DTA144EU	
Q670	8-729-903-10	TRANSISTOR FMW1	
Q671	8-729-905-23	TRANSISTOR 2SA1576-R	
Q672	8-729-905-18	TRANSISTOR DTC144EU	
Q673	8-729-905-12	TRANSISTOR DTA144EU	
Q674	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q675	8-729-905-18	TRANSISTOR DTC144EU	
Q676	8-729-905-12	TRANSISTOR DTA144EU	
Q677	8-729-905-12	TRANSISTOR DTA144EU	
Q678	8-729-202-38	TRANSISTOR 2SC3326N	
Q679	8-729-202-38	TRANSISTOR 2SC3326N	
Q680	8-729-905-35	TRANSISTOR 2SC4081-R	
Q681	8-729-905-35	TRANSISTOR 2SC4081-R	
Q683	8-729-905-23	TRANSISTOR 2SA1576-R	
Q684	8-729-905-18	TRANSISTOR DTC144EU	
Q685	8-729-905-12	TRANSISTOR DTA144EU	
Q686	8-729-905-35	TRANSISTOR 2SC4081-R	
Q687	8-729-905-35	TRANSISTOR 2SC4081-R	
Q688	8-729-905-35	TRANSISTOR 2SC4081-R	
Q689	8-729-905-35	TRANSISTOR 2SC4081-R	
Q690	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q691	8-729-905-18	TRANSISTOR DTC144EU	
Q692	8-729-905-18	TRANSISTOR DTC144EU	
Q693	8-729-905-35	TRANSISTOR 2SC4081-R	
Q694	8-729-905-35	TRANSISTOR 2SC4081-R	
Q695	8-729-905-12	TRANSISTOR DTA144EU	
Q696	8-729-905-18	TRANSISTOR DTC144EU	
Q697	8-729-905-12	TRANSISTOR DTA144EU	
Q698	8-729-903-10	TRANSISTOR FMW1	
Q700	8-729-202-38	TRANSISTOR 2SC3326N	
Q701	8-729-905-35	TRANSISTOR 2SC4081-R	
Q702	8-729-905-35	TRANSISTOR 2SC4081-R	
Q703	8-729-903-10	TRANSISTOR FMW1	
Q705	8-729-905-12	TRANSISTOR DTA144EU	
Q707	8-729-904-20	TRANSISTOR FMA2	
Q708	8-729-904-07	TRANSISTOR FMG2	
Q711	8-729-905-12	TRANSISTOR DTA144EU	
Q712	8-729-905-12	TRANSISTOR DTA144EU	
Q717	8-729-905-23	TRANSISTOR 2SA1576-R	
Q719	8-729-905-18	TRANSISTOR DTC144EU	
Q721	8-729-202-38	TRANSISTOR 2SC3326N	
Q722	8-729-905-35	TRANSISTOR 2SC4081-R	
Q723	8-729-904-07	TRANSISTOR FMG2	
Q724	8-729-905-23	TRANSISTOR 2SA1576-R	
Q725	8-729-905-23	TRANSISTOR 2SA1576-R	
Q727	8-729-905-45	TRANSISTOR DTA143EU	
Q728	8-729-905-23	TRANSISTOR 2SA1576-R	
Q729	8-729-905-35	TRANSISTOR 2SC4081-R	
Q730	8-729-905-23	TRANSISTOR 2SA1576-R	
Q731	8-729-905-12	TRANSISTOR DTA144EU	
Q732	8-729-905-35	TRANSISTOR 2SC4081-R	
Q733	8-729-905-18	TRANSISTOR DTC144EU	
Q734	8-729-905-18	TRANSISTOR DTC144EU	
Q735	8-729-905-35	TRANSISTOR 2SC4081-R	
Q736	8-729-905-45	TRANSISTOR DTA143EU	
Q737	8-729-905-35	TRANSISTOR 2SC4081-R	
Q738	8-729-905-35	TRANSISTOR 2SC4081-R	
Q742	8-729-905-23	TRANSISTOR 2SA1576-R	
Q743	8-729-905-35	TRANSISTOR 2SC4081-R	
Q744	8-729-905-35	TRANSISTOR 2SC4081-R	
Q745	8-729-905-18	TRANSISTOR DTC144EU	
Q746	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q747	8-729-905-23	TRANSISTOR 2SA1576-R	
Q748	8-729-905-35	TRANSISTOR 2SC4081-R	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
Q751	8-729-905-35	TRANSISTOR 2SC4081-R	
Q752	8-729-905-23	TRANSISTOR 2SA1576-R	
Q753	8-729-904-20	TRANSISTOR FMA2	
Q756	8-729-905-18	TRANSISTOR DTC144EU	
Q757	8-729-905-35	TRANSISTOR 2SC4081-R	
Q758	8-729-905-23	TRANSISTOR 2SA1576-R	
Q759	8-729-905-35	TRANSISTOR 2SC4081-R	
Q760	8-729-905-12	TRANSISTOR DTA144EU	
Q761	8-729-905-18	TRANSISTOR DTC144EU	
Q762	8-729-905-18	TRANSISTOR DTC144EU	
Q763	8-729-905-18	TRANSISTOR DTC144EU	
Q764	8-729-905-35	TRANSISTOR 2SC4081-R	
Q765	8-729-905-35	TRANSISTOR 2SC4081-R	
Q766	8-729-905-23	TRANSISTOR 2SA1576-R	
Q770	8-729-101-07	TRANSISTOR 2SB798-DL	
Q772	8-729-905-12	TRANSISTOR DTA144EU	
Q773	8-729-905-12	TRANSISTOR DTA144EU	
Q774	8-729-905-35	TRANSISTOR 2SC4081-R	
Q775	8-729-905-18	TRANSISTOR DTC144EU	
Q776	8-729-905-12	TRANSISTOR DTA144EU	
Q777	8-729-905-23	TRANSISTOR 2SA1576-R	
Q784	8-729-905-35	TRANSISTOR 2SC4081-R	
Q786	8-729-905-18	TRANSISTOR DTC144EU	
		RESISTOR	
R410	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R411	1-216-830-11	METAL GLAZE 5.6K 5% 1/16W	
R412	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R414	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R415	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R418	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R419	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R420	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R421	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R422	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R423	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R424	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R425	1-216-847-11	METAL GLAZE 150K 5% 1/16W	
R427	1-216-847-11	METAL GLAZE 150K 5% 1/16W	
R428	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R429	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R430	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R431	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R437	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R439	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R440	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R448	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R449	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R451	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R452	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R453	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R454	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R456	1-216-856-11	METAL GLAZE 820K 5% 1/16W	

Ref.No	Part No.	Description	Remark
R457	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R458	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R459	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R461	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R462	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
R463	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R464	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R465	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R466	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R467	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R468	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R471	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R472	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R473	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R474	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R475	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R476	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R484	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R485	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R486	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R488	1-216-850-11	METAL GLAZE 270K 5% 1/16W	
R489	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R490	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R491	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R492	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R496	1-216-138-00	METAL GLAZE 3.3 5% 1/8W	
R498	1-216-815-11	METAL GLAZE 330 5% 1/16W	
R499	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R558	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R559	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R560	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R561	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R562	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R563	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R564	1-216-819-11	METAL GLAZE 680 5% 1/16W	
R565	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R567	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R568	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R569	1-216-819-11	METAL GLAZE 680 5% 1/16W	
R570	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R571	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R572	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R574	1-216-805-11	METAL GLAZE 47 5% 1/16W	
R575	1-216-805-11	METAL GLAZE 47 5% 1/16W	
R576	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R577	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R578	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R579	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R581	1-216-814-11	METAL GLAZE 270 5% 1/16W	
R582	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R585	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R586	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
R587	1-216-837-11	METAL GLAZE 22K 5% 1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R588	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R589	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R590	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R591	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R601	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R604	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R607	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R608	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R609	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R610	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R611	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R612	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R613	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R617	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R619	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R620	1-216-855-11	METAL GLAZE	680K	5%	1/16W	
R621	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R622	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R623	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R625	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R627	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R630	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R631	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R632	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R634	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R636	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R638	1-216-801-11	METAL GLAZE	22	5%	1/16W	
R640	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R642	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R643	1-216-812-11	METAL GLAZE	180	5%	1/16W	
R644	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R645	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R646	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R647	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R648	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R649	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R650	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R651	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R652	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R654	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R655	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R657	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R658	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R659	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R664	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R665	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R667	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R668	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R669	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R670	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R671	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R672	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R673	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R674	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R675	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R676	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R677	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R678	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R679	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R680	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R681	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R682	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R683	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R684	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R686	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R688	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R690	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R691	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R692	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R693	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R694	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R695	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R696	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R697	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R698	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R700	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R701	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R703	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R704	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R705	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R706	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R707	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R709	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R710	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R711	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R712	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R713	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R714	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R715	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R716	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R718	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R719	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R720	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R721	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R723	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R724	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R725	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R726	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R727	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R728	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R729	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R731	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R735	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R738	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R739	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R740	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R741	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R742	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R743	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R744	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R746	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R747	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R748	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R749	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R750	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R751	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R752	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R753	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R754	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R755	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R756	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R757	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R758	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R759	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R760	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R761	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R762	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R763	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R764	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R766	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R767	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R768	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R769	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R770	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R771	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R772	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R773	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R774	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R775	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R776	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R777	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R778	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R779	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R780	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R781	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R782	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R783	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R784	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R785	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R787	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R788	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R789	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R790	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R791	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R792	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R793	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R794	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R795	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R796	1-216-864-11	METAL GLAZE	0	5%	1/16W	

Ref.No	Part No.	Description				Remark
R799	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R801	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R802	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R803	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R804	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R805	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R807	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R808	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R809	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R810	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R811	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R812	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R813	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R814	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R815	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R817	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R818	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R819	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R820	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R822	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R823	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R824	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R825	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R826	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R828	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R831	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R832	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R834	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R835	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R836	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R837	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R838	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R839	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R840	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R841	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R844	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R845	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R846	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R847	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R848	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R849	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R850	1-216-808-11	METAL GLAZE	82	5%	1/16W	
R851	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R852	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R854	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R856	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R857	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R858	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R859	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R860	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R861	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R862	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R863	1-216-834-11	METAL GLAZE	12K	5%	1/16W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R865	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R866	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R869	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R870	1-216-810-11	METAL GLAZE	120	5%	1/16W	
R871	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R872	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R873	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R874	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R875	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R876	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R877	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R878	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R879	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R880	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R881	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R882	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R883	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R884	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R885	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R886	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R887	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R888	1-216-810-11	METAL GLAZE	120	5%	1/16W	
R889	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R890	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R891	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R892	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R893	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R894	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R895	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R896	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R897	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R898	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R899	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R900	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R901	1-216-804-11	METAL GLAZE	39	5%	1/16W	
R902	1-216-804-11	METAL GLAZE	39	5%	1/16W	
R903	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R905	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R908	1-216-804-11	METAL GLAZE	39	5%	1/16W	
R909	1-216-804-11	METAL GLAZE	39	5%	1/16W	
R911	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R912	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R913	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R917	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R919	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R920	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R923	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R924	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R925	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R926	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R928	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R929	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R931	1-216-818-11	METAL GLAZE	560	5%	1/16W	

Ref.No	Part No.	Description				Remark
R932	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R933	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R934	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R935	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R936	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R938	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R939	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R940	1-216-810-11	METAL GLAZE	120	5%	1/16W	
R941	1-216-812-11	METAL GLAZE	180	5%	1/16W	
R943	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R945	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R946	1-218-708-11	METAL CHIP	4.7K	0.50%	1/16W	
R947	1-218-706-11	METAL CHIP	3.9K	0.50%	1/16W	
R948	1-218-690-91	METAL CHIP	820	0.50%	1/16W	
R949	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R950	1-218-742-91	METAL CHIP	120K	0.50%	1/16W	
R951	1-218-704-11	METAL CHIP	3.3K	0.50%	1/16W	
R952	1-218-708-11	METAL CHIP	4.7K	0.50%	1/16W	
R953	1-218-688-11	METAL CHIP	680	0.50%	1/16W	
R954	1-218-732-91	METAL CHIP	47K	0.50%	1/16W	
R955	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R956	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R957	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R958	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R959	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R960	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R961	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R962	1-216-804-11	METAL GLAZE	39	5%	1/16W	
R963	1-216-804-11	METAL GLAZE	39	5%	1/16W	
R965	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R966	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R969	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R970	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R971	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R972	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R973	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R974	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R976	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R977	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R978	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R981	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R983	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R984	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R985	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R986	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R987	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R989	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R990	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R992	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R993	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R994	1-216-821-11	METAL GLAZE	1K	5%	1/16W	

When indicating parts by reference number, please include the board name.

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV416	1-238-092-11	RES, ADJ CERMET 47K	
RV417	1-238-090-11	RES, ADJ CERMET 10K	
RV650	1-238-091-11	RES, ADJ CERMET 22K	
RV651	1-238-092-11	RES, ADJ CERMET 47K	
RV652	1-238-091-11	RES, ADJ CERMET 22K	
RV653	1-238-089-11	RES, ADJ CERMET 4.7K	
RV654	1-238-089-11	RES, ADJ CERMET 4.7K	
RV655	1-238-088-11	RES, ADJ, CERMET 2.2K	
RV656	1-238-091-11	RES, ADJ CERMET 22K	
RV657	1-238-089-11	RES, ADJ CERMET 4.7K	
RV658	1-238-090-11	RES, ADJ CERMET 10K	
RV661	1-238-089-11	RES, ADJ CERMET 4.7K	
RV662	1-238-087-11	RES, ADJ CERMET 1K	
RV663	1-238-087-11	RES, ADJ CERMET 1K	
RV664	1-238-087-11	RES, ADJ CERMET 1K	
RV666	1-238-087-11	RES, ADJ CERMET 1K	
RV686	1-238-087-11	RES, ADJ CERMET 1K	

SWITCH

Ref.No	Part No.	Description	Remark
SW650	1-553-977-00	SWITCH, SLIDE (IN/OUT) (E/AUS MODEL)	

CRYSTAL

Ref.No	Part No.	Description	Remark
X650	1-577-117-21	VIBRATOR, CRYSTAL (4.43MHz)	

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*A-7062-326-A SS-133 BOARD, COMPLETE (Ref.No 2,000 Series)
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A-7068-183-A HR-10P BOARD, COMPLETE (HIC)

Ref.No	Part No.	Description	Remark
	1-634-426-11	FP-255 FLEXIBLE BOARD	
	1-634-427-11	FP-256 FLEXIBLE BOARD	
	1-634-428-11	FP-257 FLEXIBLE BOARD	
	1-634-430-11	FP-259 FLEXIBLE BOARD	
	*3-744-788-01	CASE, SHIELD, RP	
	*3-744-789-01	LID, FRONT, RP SHIELD	
	*3-744-790-01	LID, REAR, RP SHIELD	
	8-741-100-63	IC SBX1619-51	

CAPACITOR

Ref.No	Part No.	Description		Remark
C001	1-162-916-11	CERAMIC CHIP 12PF	5%	50V
C002	1-162-916-11	CERAMIC CHIP 12PF	5%	50V
C003	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C004	1-126-602-11	ELECT CHIP 3.3MF	20%	50V
C005	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C006	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C010	1-126-444-71	ELECT 33MF	20%	25V
C011	1-126-447-61	ELECT 4.7MF	20%	35V
C012	1-162-947-11	CERAMIC CHIP 33PF	5%	50V
C013	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C014	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C015	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C016	1-162-969-11	CERAMIC CHIP 0.0068MF	10%	25V
C018	1-136-718-11	FILM CHIP 0.1MF	5%	25V
C019	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C020	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C021	1-162-967-11	CERAMIC CHIP 0.0033MF	10%	50V
C022	1-162-967-11	CERAMIC CHIP 0.0033MF	10%	50V
C023	1-162-967-11	CERAMIC CHIP 0.0033MF	10%	50V
C025	1-128-006-11	ELECT CHIP 4.7MF	20%	25V
C026	1-164-330-21	CERAMIC CHIP 0.22MF	10%	16V
C027	1-164-330-21	CERAMIC CHIP 0.22MF	10%	16V
C028	1-135-216-11	TANTAL. CHIP 10MF	20%	10V
C030	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C031	1-135-216-11	TANTAL. CHIP 10MF	20%	10V
C032	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C033	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C034	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C035	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C036	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C037	1-162-638-11	CERAMIC CHIP 1MF		16V
C038	1-135-159-21	TANTAL. CHIP 10MF	20%	20V
C039	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C040	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C041	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C044	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C045	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C046	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C048	1-128-004-11	ELECT CHIP 10MF	20%	16V
C049	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V
C101	1-162-921-11	CERAMIC CHIP 33PF	5%	50V
C103	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C105	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C106	1-124-779-00	ELECT CHIP 10MF	20%	16V
C110	1-162-962-11	CERAMIC CHIP 470PF	10%	50V
C111	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C112	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C113	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C114	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C115	1-162-997-11	CERAMIC CHIP 10PF	0.5PF	50V
C116	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C118	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C119	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C120	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C121	1-164-299-11	CERAMIC CHIP 0.22MF	10%	25V
C122	1-126-445-61	ELECT 2.2MF	20%	35V
C123	1-126-445-61	ELECT 2.2MF	20%	35V
C124	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C125	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C150	1-162-921-11	CERAMIC CHIP 33PF	5%	50V
C151	1-162-921-11	CERAMIC CHIP 33PF	5%	50V
C152	1-128-004-11	ELECT CHIP 10MF	20%	16V
C153	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C154	1-128-006-11	ELECT CHIP 4.7MF	20%	25V

When indicating parts by reference number, please include the board name.

SS-133

Ref.No	Part No.	Description		Remark
C155	1-164-634-11	CERAMIC CHIP 1MF		16V
C156	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C157	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C158	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C159	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C160	1-162-960-11	CERAMIC CHIP 220PF	10%	50V
C161	1-162-968-11	CERAMIC CHIP 0.0047MF	10%	50V
C162	1-162-967-11	CERAMIC CHIP 0.0033MF	10%	50V
C163	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C165	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C166	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C167	1-162-638-11	CERAMIC CHIP 1MF		16V
C168	1-162-638-11	CERAMIC CHIP 1MF		16V
C169	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C170	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C171	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C172	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C173	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C175	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C176	1-162-965-11	CERAMIC CHIP 0.0015MF	10%	50V
C177	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C178	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C179	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C180	1-164-634-11	CERAMIC CHIP 1MF		16V
C183	1-128-004-11	ELECT CHIP 10MF	20%	16V
C201	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C205	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C208	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C209	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C210	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C211	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C212	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C213	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C214	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C215	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C216	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C218	1-162-968-11	CERAMIC CHIP 0.0047MF	10%	50V
C219	1-162-940-11	CERAMIC CHIP 9PF	0.5PF	50V
C222	1-162-938-11	CERAMIC CHIP 7PF	0.5PF	50V
C224	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C225	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C226	1-162-952-11	CERAMIC CHIP 82PF	5%	50V
C227	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C228	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C229	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C230	1-128-004-11	ELECT CHIP 10MF	20%	16V
C231	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C232	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C233	1-162-947-11	CERAMIC CHIP 33PF	5%	50V
C234	1-162-965-11	CERAMIC CHIP 0.0015MF	10%	50V
C235	1-162-958-11	CERAMIC CHIP 270PF	5%	50V
C236	1-162-958-11	CERAMIC CHIP 270PF	5%	50V
C237	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C238	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C240	1-162-948-11	CERAMIC CHIP 39PF	5%	50V
C241	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C242	1-162-948-11	CERAMIC CHIP 39PF	5%	50V
C243	1-162-948-11	CERAMIC CHIP 39PF	5%	50V
C244	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C245	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C246	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C255	1-162-954-11	CERAMIC CHIP 120PF	5%	50V
C256	1-162-951-11	CERAMIC CHIP 68PF	5%	50V
C257	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C258	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C261	1-162-938-11	CERAMIC CHIP 7PF	0.5PF	50V
C262	1-162-952-11	CERAMIC CHIP 82PF	5%	50V
C263	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C264	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C265	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C266	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C267	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C268	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C269	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C270	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C271	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C272	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C273	1-128-004-11	ELECT CHIP 10MF	20%	16V
C274	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C275	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C276	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C277	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C278	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C279	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C280	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C281	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C282	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C283	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C284	1-162-936-11	CERAMIC CHIP 5PF	0.25PF	50V
C285	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C286	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C287	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C288	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C289	1-128-004-11	ELECT CHIP 10MF	20%	16V
C290	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C291	1-128-004-11	ELECT CHIP 10MF	20%	16V
C292	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C293	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C294	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C295	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C296	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C297	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C298	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C299	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C300	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C301	1-162-974-11	CERAMIC CHIP 0.01MF		50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C302	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C303	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C304	1-128-004-11	ELECT CHIP 10MF	20%	16V
C305	1-162-966-11	CERAMIC CHIP 0.0022MF		50V
C308	1-128-011-11	ELECT CHIP 0.33MF	20%	50V
C309	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C310	1-162-965-11	CERAMIC CHIP 0.0015MF	10%	50V
C317	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C318	1-128-004-11	ELECT CHIP 10MF	20%	16V
C319	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C320	1-128-004-11	ELECT CHIP 10MF	20%	16V
C321	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C322	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C323	1-128-008-11	ELECT CHIP 3.3MF	20%	35V
C324	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C325	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C326	1-126-417-61	ELECT 10MF	20%	6.3V
C327	1-126-154-11	ELECT 47MF	20%	6.3V
C328	1-135-202-21	TANTAL. CHIP 22MF	20%	4V
C329	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C330	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C331	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C332	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C333	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C334	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C335	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C336	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C337	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C338	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C340	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C341	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C342	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C343	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C344	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C345	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C346	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C347	1-162-943-11	CERAMIC CHIP 15PF	5%	50V
C349	1-162-936-11	CERAMIC CHIP 5PF	0.25PF	50V

CONNECTOR

Ref.No	Part No.	Description
CN003	1-569-558-11	CONNECTOR, BOARD TO BOARD 20P
CN004	1-565-878-11	PIN, CONNECTOR (PC BOARD) 6P
CN007	1-568-366-21	CONNECTOR, BOARD TO BOARD 16P
CN009	1-568-367-11	CONNECTOR, BOARD TO BOARD 18P
CN200	*1-566-184-11	PIN, CONNECTOR (PC BOARD) 5P

TRIMMER

Ref.No	Part No.	Description
CT101	1-141-424-61	CAP, ADJ
CT102	1-141-424-61	CAP, ADJ

DIODE

Ref.No	Part No.	Description	Remark
D001	8-719-941-86	DIODE DAN202U	
D002	8-719-404-46	DIODE MA110	
D003	8-719-404-46	DIODE MA110	
D004	8-719-941-86	DIODE DAN202U	
D101	8-719-949-46	DIODE 1T32	
D102	8-719-404-46	DIODE MA110	
D104	8-719-941-86	DIODE DAN202U	
D201	8-719-801-41	DIODE 1SS196	
D202	8-719-941-86	DIODE DAN202U	
D203	8-719-941-86	DIODE DAN202U	
D205	8-719-941-86	DIODE DAN202U	
D208	8-719-941-86	DIODE DAN202U	
D210	8-719-941-86	DIODE DAN202U	
D211	8-719-941-86	DIODE DAN202U	

IC

Ref.No	Part No.	Description	Remark
IC001	8-752-817-03	IC CXP80116-698Q	
IC003	8-759-998-98	IC LM358D	
IC004	8-759-148-05	IC CXA8010M	
IC005	8-759-805-06	IC CXA1127M	
IC006	8-759-990-55	IC CXA8006M	
IC007	8-759-200-77	IC TC4028BF	
IC008	8-759-748-72	IC BR93C46F	
IC101	8-759-970-80	IC MB673198U	
IC102	8-759-148-62	IC UPD6451G	
IC103	8-759-420-01	IC AN2512S	
IC104	8-759-234-20	IC TC7S08F	
IC150	8-752-035-48	IC CXA1204Q	
IC201	8-759-012-00	IC MC10H116M	
IC202	8-759-998-92	IC LM393D	
IC204	8-759-998-32	IC CXD-2107M	

COIL

Ref.No	Part No.	Description	Remark
L001	1-412-058-11	INDUCTOR CHIP 10UH	
L101	1-410-388-21	INDUCTOR CHIP 39UH	
L102	1-410-393-11	INDUCTOR CHIP 100UH	
L103	1-408-797-11	INDUCTOR CHIP 470UH	
L150	1-412-058-11	INDUCTOR CHIP 10UH	
L151	1-408-795-21	INDUCTOR CHIP 330UH	
L152	1-412-058-11	INDUCTOR CHIP 10UH	
L201	1-412-058-11	INDUCTOR CHIP 10UH	
L202	1-412-058-11	INDUCTOR CHIP 10UH	
L203	1-410-732-31	INDUCTOR CHIP 0.18UH	
L205	1-410-384-31	INDUCTOR CHIP 18UH	
L206	1-410-384-31	INDUCTOR CHIP 18UH	
L207	1-410-381-11	INDUCTOR CHIP 10UH	
L208	1-408-793-21	INDUCTOR CHIP 220UH	
L209	1-408-795-21	INDUCTOR CHIP 330UH	
L210	1-410-167-41	INDUCTOR CHIP 820UH	
L211	1-410-387-11	INDUCTOR CHIP 33UH	
L212	1-410-657-21	INDUCTOR CHIP 180UH	
L214	1-410-387-11	INDUCTOR CHIP 33UH	
L215	1-410-374-11	INDUCTOR CHIP 2.7UH	
L216	1-410-381-11	INDUCTOR CHIP 10UH	
L217	1-410-380-31	INDUCTOR CHIP 8.2UH	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
L218	1-410-379-21	INDUCTOR CHIP 6.8UH	
L221	1-408-791-00	INDUCTOR CHIP 150UH	
L222	1-408-795-21	INDUCTOR CHIP 330UH	
L224	1-410-380-31	INDUCTOR CHIP 8.2UH	
L225	1-412-058-11	INDUCTOR CHIP 10UH	
L226	1-410-380-31	INDUCTOR CHIP 8.2UH	
L227	1-412-058-11	INDUCTOR CHIP 10UH	
L228	1-410-382-31	INDUCTOR CHIP 12UH	
L229	1-410-382-31	INDUCTOR CHIP 12UH	
L230	1-410-657-21	INDUCTOR CHIP 180UH	
L231	1-412-058-11	INDUCTOR CHIP 10UH	
L232	1-410-386-11	INDUCTOR CHIP 27UH	
L233	1-410-381-11	INDUCTOR CHIP 10UH	
L234	1-410-381-11	INDUCTOR CHIP 10UH	
L235	1-412-058-11	INDUCTOR CHIP 10UH	
L236	1-412-058-11	INDUCTOR CHIP 10UH	

IC LINK

Ref.No	Part No.	Description	Remark
PS101⚠	1-532-605-00	LINK, IC ICP-N10 (0.4A)	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q001	8-729-907-00	TRANSISTOR DTC114EU	
Q002	8-729-905-12	TRANSISTOR DTA144EU	
Q003	8-729-905-18	TRANSISTOR DTC144EU	
Q004	8-729-820-47	TRANSISTOR 2SB1202FAT	
Q005	8-729-905-35	TRANSISTOR 2SC4081-R	
Q007	8-729-905-35	TRANSISTOR 2SC4081-R	
Q008	8-729-905-35	TRANSISTOR 2SC4081-R	
Q009	8-729-905-35	TRANSISTOR 2SC4081-R	
Q010	8-729-907-03	TRANSISTOR FMG5	
Q011	8-729-905-18	TRANSISTOR DTC144EU	
Q012	8-729-905-18	TRANSISTOR DTC144EU	
Q013	8-729-905-18	TRANSISTOR DTC144EU	
Q014	8-729-822-48	TRANSISTOR FC101	
Q015	8-729-905-35	TRANSISTOR 2SC4081-R	
Q016	8-729-905-23	TRANSISTOR 2SA1576-R	
Q017	8-729-907-03	TRANSISTOR FMG5	
Q018	8-729-905-18	TRANSISTOR DTC144EU	
Q150	8-729-905-23	TRANSISTOR 2SA1576-R	
Q151	8-729-905-18	TRANSISTOR DTC144EU	
Q152	8-729-905-35	TRANSISTOR 2SC4081-R	
Q153	8-729-905-23	TRANSISTOR 2SA1576-R	
Q201	8-729-905-35	TRANSISTOR 2SC4081-R	
Q202	8-729-905-35	TRANSISTOR 2SC4081-R	
Q203	8-729-905-35	TRANSISTOR 2SC4081-R	
Q208	8-729-216-22	TRANSISTOR 2SA1162	
Q209	8-729-905-18	TRANSISTOR DTC144EU	
Q213	8-729-216-22	TRANSISTOR 2SA1162	
Q214	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q215	8-729-216-22	TRANSISTOR 2SA1162	
Q217	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q218	8-729-905-35	TRANSISTOR 2SC4081-R	
Q219	8-729-905-35	TRANSISTOR 2SC4081-R	
Q221	8-729-905-35	TRANSISTOR 2SC4081-R	
Q222	8-729-907-00	TRANSISTOR DTC114EU	
Q223	8-729-905-35	TRANSISTOR 2SC4081-R	
Q224	8-729-904-07	TRANSISTOR FMG2	
Q225	8-729-905-45	TRANSISTOR DTA143EU	
Q227	8-729-905-35	TRANSISTOR 2SC4081-R	
Q229	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q230	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q231	8-729-905-18	TRANSISTOR DTC144EU	
Q232	8-729-905-18	TRANSISTOR DTC144EU	
Q238	8-729-117-31	TRANSISTOR 2SC4177-L5	
Q239	8-729-905-18	TRANSISTOR DTC144EU	
Q240	8-729-905-18	TRANSISTOR DTC144EU	
Q242	8-729-117-31	TRANSISTOR 2SC4177-L5	
Q243	8-729-905-18	TRANSISTOR DTC144EU	
Q244	8-729-140-63	TRANSISTOR 2SA1611-M5	
Q245	8-729-117-31	TRANSISTOR 2SC4177-L5	
Q246	8-729-905-18	TRANSISTOR DTC144EU	
Q247	8-729-905-35	TRANSISTOR 2SC4081-R	
Q248	8-729-903-10	TRANSISTOR FMW1	
Q249	8-729-905-18	TRANSISTOR DTC144EU	
Q250	8-729-905-12	TRANSISTOR DTA144EU	
Q251	8-729-905-35	TRANSISTOR 2SC4081-R	
Q252	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q253	8-729-320-17	TRANSISTOR 2SA1122CD	
Q254	8-729-905-35	TRANSISTOR 2SC4081-R	
Q255	8-729-904-07	TRANSISTOR FMG2	
Q256	8-729-905-12	TRANSISTOR DTA144EU	
Q257	8-729-905-18	TRANSISTOR DTC144EU	
Q258	8-729-903-10	TRANSISTOR FMW1	
Q259	8-729-905-35	TRANSISTOR 2SC4081-R	
Q260	8-729-905-35	TRANSISTOR 2SC4081-R	
Q261	8-729-905-23	TRANSISTOR 2SA1576-R	
Q262	8-729-905-23	TRANSISTOR 2SA1576-R	
Q263	8-729-907-26	TRANSISTOR IMX1	
Q265	8-729-905-35	TRANSISTOR 2SC4081-R	
Q266	8-729-905-35	TRANSISTOR 2SC4081-R	
Q267	8-729-905-35	TRANSISTOR 2SC4081-R	
Q268	8-729-905-23	TRANSISTOR 2SA1576-R	
Q269	8-729-907-26	TRANSISTOR IMX1	
Q270	8-729-905-12	TRANSISTOR DTA144EU	
Q272	8-729-922-94	TRANSISTOR DTC143TU	
Q273	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q277	8-729-905-35	TRANSISTOR 2SC4081-R	
Q278	8-729-905-35	TRANSISTOR 2SC4081-R	
Q279	8-729-905-18	TRANSISTOR DTC144EU	
Q280	8-729-905-35	TRANSISTOR 2SC4081-R	
Q282	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q283	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q284	8-729-905-35	TRANSISTOR 2SC4081-R	
Q285	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q286	8-729-105-68	TRANSISTOR 2SC3356	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
Q287	8-729-924-46	TRANSISTOR DTC124XU				
Q288	8-729-905-12	TRANSISTOR DTA144EU				
Q289	8-729-102-07	TRANSISTOR 2SC2223-F13				
Q290	8-729-102-07	TRANSISTOR 2SC2223-F13				
Q291	8-729-907-26	TRANSISTOR IMX1				
Q292	8-729-905-12	TRANSISTOR DTA144EU				
Q294	8-729-905-18	TRANSISTOR DTC144EU				
Q295	8-729-905-35	TRANSISTOR 2SC4081-R				

RESISTOR

Ref.No	Part No.	Description				Remark
R001	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R002	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R003	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R004	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R005	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R006	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R007	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R008	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R009	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R010	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R011	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R012	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R014	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R015	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R016	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R017	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R018	1-216-850-11	METAL GLAZE	270K	5%	1/16W	
R019	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R020	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R021	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R022	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R023	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R024	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R025	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R026	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R027	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R029	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R030	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R031	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R032	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R033	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R034	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R035	1-216-097-00	METAL GLAZE	100K	1%	1/10W	
R036	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R037	1-216-097-00	METAL GLAZE	100K	1%	1/10W	
R038	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R039	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R040	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R041	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R042	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R043	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R044	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R045	1-217-671-11	METAL GLAZE	1	5%	1/10W	

Ref.No	Part No.	Description				Remark
R046	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R049	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R050	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R051	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R053	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R054	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R055	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R056	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R057	1-216-336-11	METAL GLAZE	47K	1%	1/10W	
R058	1-216-336-11	METAL GLAZE	47K	1%	1/10W	
R059	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R060	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R061	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R063	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R066	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R067	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R068	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R069	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R070	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R071	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R072	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R073	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R074	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R075	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R076	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R077	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R078	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R079	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R080	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R081	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R082	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R083	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R084	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R085	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R086	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R087	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R088	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R089	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R090	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R095	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R097	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R098	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R099	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R100	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R102	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R105	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R106	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R107	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R108	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R109	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R110	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R111	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R112	1-216-821-11	METAL GLAZE	1K	5%	1/16W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

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Ref.No	Part No.	Description				Remark
R113	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R114	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R120	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R121	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R122	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R123	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R124	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R125	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R127	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R129	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R130	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R131	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R132	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R133	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R134	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R136	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R137	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R138	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R139	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R140	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R141	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R142	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R143	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R144	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R145	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R146	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R147	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R148	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R150	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R151	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R152	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R153	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R154	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R155	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R156	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R157	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R158	1-216-812-11	METAL GLAZE	180	5%	1/16W	
R161	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R162	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R163	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R164	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R165	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R166	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R167	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R168	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R169	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R170	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R171	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R172	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R173	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R174	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R175	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R176	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R177	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R178	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R179	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R181	1-216-803-11	METAL GLAZE	33	5%	1/16W	
R182	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R183	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R184	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R185	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R186	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R188	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R190	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R193	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R201	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R206	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R207	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R208	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R210	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R216	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R217	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R218	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R219	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R228	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R229	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R230	1-216-805-11	METAL GLAZE	47	5%	1/16W	
R231	1-216-805-11	METAL GLAZE	47	5%	1/16W	
R232	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R233	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R234	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R235	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R236	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R237	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R238	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R239	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R240	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R241	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R243	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R244	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R245	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R246	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R247	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R248	1-216-812-11	METAL GLAZE	180	5%	1/16W	
R249	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R250	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R251	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R252	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R254	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R255	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R256	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R257	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R258	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R259	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R260	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R261	1-216-817-11	METAL GLAZE	470	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R262	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R264	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R267	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R268	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R269	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R270	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R282	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R285	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R286	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R287	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R288	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R291	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R292	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R293	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R294	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R295	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R300	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R301	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R302	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R303	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R304	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R305	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R306	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R307	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R308	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R309	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R310	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R311	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R312	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R313	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R314	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R315	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R316	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R317	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R318	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R319	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R320	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R321	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R322	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R323	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R324	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R325	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R326	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R327	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R328	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R329	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R330	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R331	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R332	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R333	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R334	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R335	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R336	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R337	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R338	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R339	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R340	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R341	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R342	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R344	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R345	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R346	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R347	1-216-846-11	METAL GLAZE	120K	5%	1/16W	
R348	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R349	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R351	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R352	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R353	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R354	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R355	1-216-855-11	METAL GLAZE	680K	5%	1/16W	
R356	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R358	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R359	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R360	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R361	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R362	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R363	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R364	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R365	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R366	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R367	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R368	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R369	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R370	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R371	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R372	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R373	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R374	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R375	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R376	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R377	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R378	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R379	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R380	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R381	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R382	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R383	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R384	1-216-850-11	METAL GLAZE	270K	5%	1/16W	
R385	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R386	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R387	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R390	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R391	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R392	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R393	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R394	1-216-841-11	METAL GLAZE	47K	5%	1/16W	

When indicating parts by reference number, please include the board name.

SS-133 | FU-71P

Ref.No	Part No.	Description				Remark
R395	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R400	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R401	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R403	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R404	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R405	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R406	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R407	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R408	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R409	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R501	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R502	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R503	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R504	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R505	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R506	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R507	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R508	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R509	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R510	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R511	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R512	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R513	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R515	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R517	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R518	1-216-810-11	METAL GLAZE	120	5%	1/16W	
R521	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R522	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R523	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R524	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R525	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R526	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R527	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R528	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R529	1-216-839-11	METAL GLAZE	33K	5%	1/16W	

VARIABLE RESISTOR

RV100	1-238-092-11	RES, ADJ CERMET 47K
RV201	1-238-222-11	RES, ADJ, METAL GLAZE 4.7K
RV202	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K
RV203	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K
RV205	1-238-089-11	RES, ADJ CERMET 4.7K
RV206	1-238-088-11	RES, ADJ, CERMET 2.2K
RV207	1-238-087-11	RES, ADJ CERMET 1K

THERMISTOR

TH001	1-800-200-00	THERMISTOR

TERMINAL PIN

TP001	*1-535-622-11	PIN, TERMINAL

Ref.No	Part No.	Description	Remark

CRYSTAL

X001	1-577-467-21	VIBRATOR, CRYSTAL
X150	1-567-699-21	VIBRATOR, CRYSTAL

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*A-7062-324-A FU-71P BOARD, COMPLETE (Ref.No 3,000 Series)
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*1-535-622-11 PIN, TERMINAL

CAPACITOR

C101	1-124-604-00	ELECT	330MF	20%	10V
C102	1-126-416-11	ELECT	220MF	20%	10V
C103	1-126-805-11	ELECT	33MF	20%	10V
C104	1-124-584-00	ELECT	100MF	20%	10V
C105	1-124-584-00	ELECT	100MF	20%	10V
C106	1-127-561-11	ELECT(SOLID)	33MF	20%	10V
C107	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C108	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C109	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C110	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C111	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C112	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C113	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C114	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C115	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C116	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C117	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C118	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C119	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C120	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C121	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C122	1-127-561-11	ELECT(SOLID)	33MF	20%	10V
C124	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C125	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C126	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C127	1-163-038-00	CERAMIC CHIP	0.1MF		25V

CONNECTOR

CN101	1-566-757-11	PIN, CONNECTOR (PC BOARD) 2P
CN102	1-569-557-11	CONNECTOR, BOARD TO BOARD 20P

DIODE

D101	8-719-981-59	DIODE FC805
D102	8-719-981-56	DIODE SB05W05CP

IC

IC101	8-759-035-98	IC MC141600FU

JACK

J101	1-537-241-11	TERMINAL BOARD (BATTERY)

When indicating parts by reference number, please include the board name.

COIL

Ref.No	Part No.	Description	Remark
L101	1-410-337-11	INDUCTOR 1UH	
L102	1-410-337-11	INDUCTOR 1UH	
L103	1-410-337-11	INDUCTOR 1UH	
L104	1-424-104-11	COIL, CHOKE 10UH	
L105	1-424-104-11	COIL, CHOKE 10UH	
L106	1-424-106-11	COIL, CHOKE 47UH	
L107	1-424-105-11	COIL, CHOKE 22UH	
L108	1-424-106-11	COIL, CHOKE 47UH	
L110	1-412-029-11	INDUCTOR CHIP 10UH	
L111	1-412-029-11	INDUCTOR CHIP 10UH	
L112	1-412-029-11	INDUCTOR CHIP 10UH	
L113	1-412-027-11	INDUCTOR CHIP 2.2UH	

IC LINK

Ref.No	Part No.	Description	Remark
PS101⚠	1-532-840-21	LINK, IC PRF1250 (1.25A)	
PS102⚠	1-532-841-21	LINK, IC PRF1600 (1.6A)	
PS103⚠	1-532-840-21	LINK, IC PRF1600 (1.6A)	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q101	8-729-805-25	TRANSISTOR 2SB1121	
Q102	8-729-822-60	TRANSISTOR 2SB1302-S	
Q103	8-729-805-25	TRANSISTOR 2SB1121	

RESISTOR

Ref.No	Part No.	Description				Remark
R101	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R102	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R103	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R104	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R105	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R106	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R107	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R108	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R109	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R110	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R111	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R112	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R113	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R114	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R115	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R116	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R117	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R118	1-216-093-00	METAL GLAZE	68K	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV101	1-238-854-11	RES, ADJ, CERMET 2.2K	
RV102	1-238-092-11	RES, ADJ CERMET 47K	

SWITCH

Ref.No	Part No.	Description	Remark
S101	1-572-284-11	SWITCH, SLIDE (EJECT)	

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Ref.No	Part No.	Description	Remark
	*1-635-932-11	FK-46 BOARD (Ref.No 3,000 Series)	

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Ref.No	Part No.	Description	Remark
	1-634-434-11	FP-263 FLEXIBLE BOARD	

DIODE

Ref.No	Part No.	Description	Remark
D501	8-719-940-45	DIODE DWA010	

SWITCH

Ref.No	Part No.	Description	Remark
S501	1-571-787-11	SWITCH, TACTILE (MENU)	
S502	1-571-787-11	SWITCH, TACTILE (SLOW)	
S503	1-571-787-11	SWITCH, TACTILE (▷)	
S504	1-571-787-11	SWITCH, TACTILE (>)	
S505	1-571-787-11	SWITCH, TACTILE (<)	
S506	1-571-787-11	SWITCH, TACTILE (PAUSE)	
S507	1-571-787-11	SWITCH, TACTILE (EXCUSE)	
S508	1-572-284-11	SWITCH, SLIDE (REC) (E/AUS MODEL)	
S509	1-572-283-11	SWITCH, SLIDE (POWER)	
S510	1-571-787-11	SWITCH, TACTILE (□)	
S511	1-571-787-11	SWITCH, TACTILE (▶)	
S512	1-571-787-11	SWITCH, TACTILE (DATA SCREEN)	
S513	1-571-787-11	SWITCH, TACTILE (FF)	
S514	1-571-787-11	SWITCH, TACTILE (◀)	
S515	1-571-787-11	SWITCH, TACTILE (▼)	
S516	1-571-787-11	SWITCH, TACTILE (REW)	

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Ref.No	Part No.	Description	Remark
	*A-7062-278-A	VF-26P BOARD, COMPLETE (Ref.No 8,000 Series)	

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Ref.No	Part No.	Description	Remark
	1-575-846-11	CONNECTOR, FPC (NON ZIF) 6P	

CAPACITOR

Ref.No	Part No.	Description				Remark
C901	1-126-369-11	ELECT	220MF	20%	6.3V	
C902	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C904	1-127-515-11	ELECT(SOLID)	47MF	20%	6.3V	
C905	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C906	1-163-115-00	CERAMIC CHIP	82PF	5%	50V	
C907⚠	1-162-625-11	CERAMIC CHIP	0.0047MF	5%	50V	
C908⚠	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V	
C909	1-126-193-11	ELECT CHIP	1MF	20%	50V	
C911	1-131-388-00	TANTALUM	68MF	10%	3.15V	
C912	1-102-038-00	CERAMIC	0.001MF		500V	
C913	1-163-033-00	CERAMIC CHIP	0.022MF		50V	
C915	1-126-193-11	ELECT CHIP	1MF	20%	50V	
C916	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V	
C917	1-135-166-21	TANTAL. CHIP	47MF	20%	6.3V	
C918	1-162-638-11	CERAMIC CHIP	1MF		16V	
C919	1-135-070-00	TANTAL. CHIP	0.1MF	10%	35V	
C920	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark
		CONNECTOR	
CN901	*1-566-195-21	PIN, CONNECTOR (PC BOARD) 2P	
CN902	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	
		COMPOSITION CIRCUIT BLOCK	
CP901	1-238-119-11	RES, ADJ	
		SOCKET	
CRT901	1-526-978-21	SOCKET ASSY, CRT	
		DIODE	
D670	8-719-404-46	DIODE MA110	
D903	8-719-400-20	DIODE MA152WA	
D955	8-719-404-19	DIODE LN1251C	
		IC	
IC901	8-759-420-01	IC AN2512S-T1	
		COIL	
L901	1-410-645-31	INDUCTOR 100UH	
L902	1-410-385-11	INDUCTOR CHIP 22UH	
L903 ⚠	.1-459-858-11	COIL, FERRITE (HLC)	
		TRANSISTOR	
Q903	8-729-106-68	TRANSISTOR 2SD1615-AGP	
Q904	8-729-216-31	TRANSISTOR 2SA1163G	
		RESISTOR	
R902	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R903	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R907	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R908	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R909	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R911	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R914	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R915	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R916	1-216-125-00	METAL GLAZE 1.5M 5% 1/10W	
R917	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R919	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R920	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R921	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R922	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R923	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R924	1-216-306-11	METAL GLAZE 3.9 5% 1/10W	
R925	1-216-336-11	METAL GLAZE 47K 1% 1/10W	
R926	1-216-107-00	METAL GLAZE 270K 1% 1/10W	
R928	1-216-870-11	METAL GLAZE 180K 1% 1/10W	
R929	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R930	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R931	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R950	1-216-041-00	METAL GLAZE 470 5% 1/10W	

Ref.No	Part No.	Description	Remark
R951	1-216-295-00	METAL GLAZE 0 5% 1/10W	
		VARIABLE RESISTOR	
RV901	1-238-647-11	RES, ADJ, METAL GLAZE 4.7M	
		TRANSFORMER	
T901 ⚠	.1-439-428-11	TRANSFORMER ASSY, FLYBACK	
		THERMISTOR	
TH901	1-807-938-11	THERMISTOR	

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Ref.No	Part No.	Description	Remark
	*A-7062-279-A	VF-27P BOARD, COMPLETE (Ref.No 9,000 Series) ***********************	
	1-575-846-11	CONNECTOR, FPC (NON ZIF) 6P	
		CAPACITOR	
C901	1-124-442-00	ELECT 330MF 20% 6.3V	
C903	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C904	1-126-160-11	ELECT 1MF 20% 50V	
C905	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C906	1-131-381-00	TANTALUM 47MF 10% 6.3V	
C907	1-162-638-11	CERAMIC CHIP 1MF 16V	
C908	1-136-165-00	FILM 0.1MF 5% 50V	
C909	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C910	1-124-587-11	ELECT 220MF 20% 6.3V	
C911	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
C912 ⚠	.1-162-625-11	CERAMIC CHIP 0.0047MF 5% 50V	
C913 ⚠	.1-162-625-11	CERAMIC CHIP 0.0047MF 5% 50V	
C914 ⚠	.1-163-209-00	CERAMIC CHIP 0.0015MF 5% 50V	
C915	1-126-090-11	ELECT 82MF 20% 10V	
C916	1-126-163-11	ELECT 4.7MF 20% 50V	
C918	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C919	1-102-038-00	CERAMIC 0.001MF 500V	
		CONNECTOR	
CN902	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	
CN903	*1-566-195-21	PIN, CONNECTOR (PC BOARD) 2P	
		DIODE	
D903	8-719-400-20	DIODE MA152WA	
D955	8-719-404-19	DIODE LN1251C	
		IC	
IC901	8-759-420-01	IC AN2512S	
		COIL	
L901	1-410-831-21	INDUCTOR 82UH	
L902	1-410-827-41	INDUCTOR 39UH	
L903 ⚠	.1-459-876-21	COIL, FERRITE (HLC)	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark
		TRANSISTOR	
Q903	8-729-216-31	TRANSISTOR 2SA1163G	
Q904	8-729-100-66	TRANSISTOR 2SC1623	
Q905	8-729-106-68	TRANSISTOR 2SD1615-AGP	
		RESISTOR	
R903	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R905	1-216-007-00	METAL GLAZE 18 5% 1/10W	
R906	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R908	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R909	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R910	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R911	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R912	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R913	1-216-107-00	METAL GLAZE 270K 1% 1/10W	
R914	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R915	1-216-306-11	METAL GLAZE 3.9 5% 1/10W	
R917	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R918	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R919	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R920	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R921	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R922	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R923	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R924	1-216-131-11	METAL GLAZE 2.7M 5% 1/10W	
R925	1-216-131-11	METAL GLAZE 2.7M 5% 1/10W	
R926	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R928	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R933	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R950	1-216-041-00	METAL GLAZE 470 5% 1/10W	
		VARIABLE RESISTOR	
RV901	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV902	1-230-866-11	RES, ADJ, METAL GLAZE 470	
RV903	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV904	1-228-762-00	RES, ADJ, METAL GLAZE 1M	
		TRANSFORMER	
T901 ⚠.	1-439-431-11	TRANSFORMER ASSY, FLYBACK	
		THERMISTOR	
TH901	1-807-938-11	THERMISTOR	
		SOCKET	
W901	1-540-019-21	SOCKET ASSY, CRT	

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Ref.No	Part No.	Description	Remark
	*A-7062-327-B	CC-33P BOARD, COMPLETE ***********************	(Ref.No 6,000 Series)
	1-634-429-11	FP-258 FLEXIBLE BOARD	
		CAPACITOR	
C901	1-135-157-21	TANTAL. CHIP 10MF 20%	6.3V
C902	1-135-157-21	TANTAL. CHIP 10MF 20%	6.3V
C910	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C911	1-163-099-00	CERAMIC CHIP 18PF 5%	50V
C912	1-135-181-21	TANTAL. CHIP 4.7MF 20%	6.3V
C913	1-163-099-00	CERAMIC CHIP 18PF 5%	50V
C914	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C915	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V
C916	1-135-181-21	TANTAL. CHIP 4.7MF 20%	6.3V
C917	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C918	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C919	1-163-133-00	CERAMIC CHIP 470PF 5%	50V
C920	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V
C921	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V
C922	1-135-157-21	TANTAL. CHIP 10MF 20%	6.3V
C923	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C924	1-163-109-00	CERAMIC CHIP 47PF 5%	50V
C925	1-135-181-21	TANTAL. CHIP 4.7MF 20%	6.3V
C926	1-163-101-00	CERAMIC CHIP 22PF 5%	50V
C927	1-163-099-00	CERAMIC CHIP 18PF 5%	50V
C928	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C929	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V
C930	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V
C931	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C932	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C933	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C934	1-163-035-00	CERAMIC CHIP 0.047MF	50V
		CONNECTOR	
CN901	1-566-529-11	CONNECTOR, FPC (ZIF) 13P	
CN902	1-566-527-11	CONNECTOR, FPC (ZIF) 11P	
		DIODE	
D912	8-719-404-46	DIODE MA110	
D913	8-719-404-46	DIODE MA110	
		IC	
IC910	8-759-502-14	IC CF79050PV	
IC911	8-752-010-20	IC CX20102	
		COIL	
L910	1-410-658-31	INDUCTOR CHIP 220UH	
L912	1-410-381-11	INDUCTOR CHIP 10UH	
L913	1-412-058-11	INDUCTOR CHIP 10UH	
L914	1-412-058-11	INDUCTOR CHIP 10UH	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q901	8-729-902-93	TRANSISTOR FMG4	
Q912	8-729-901-01	TRANSISTOR DTC144EK	
Q913	8-729-100-66	TRANSISTOR 2SC1623	
Q914	8-729-100-66	TRANSISTOR 2SC1623	
Q915	8-729-100-66	TRANSISTOR 2SC1623	
Q916	8-729-100-66	TRANSISTOR 2SC1623	
Q917	8-729-901-01	TRANSISTOR DTC144EK	
Q918	8-729-141-48	TRANSISTOR 2SB624-BV345	

RESISTOR

Ref.No	Part No.	Description	Remark
R901	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R902	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R905	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R906	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R910	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R916	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R917	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R918	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R922	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R924	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R926	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R927	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R928	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R929	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R930	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R931	1-216-645-11	METAL CHIP 560 0.50% 1/10W	
R932	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R933	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R934	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R935	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R936	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R937	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R938	1-216-029-00	METAL GLAZE 150 5% 1/10W	
R939	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R940	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R941	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R942	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R943	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R944	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R945	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R946	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R948	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R949	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R950	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R951	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R953	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R954	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R955	1-216-029-00	METAL GLAZE 150 5% 1/10W	
R956	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R957	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R958	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R959	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R960	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R962	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R963	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R964	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R965	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R966	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R967	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R968	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R969	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R970	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R971	1-216-029-00	METAL GLAZE 150 5% 1/10W	
R972	1-216-029-00	METAL GLAZE 150 5% 1/10W	
R973	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R975	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R976	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R977	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R978	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R979	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R983	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R986	1-216-295-00	METAL GLAZE 0 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV910	1-238-854-11	RES, ADJ, CERMET 2.2K	

CRYSTAL

Ref.No	Part No.	Description	Remark
X910	1-577-553-11	VIBRATOR, CRYSTAL	

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Ref.No	Part No.	Description	Remark
	*A-7062-328-A	AU-60P BOARD, COMPLETE (Ref.No 6,000 Series) ************************	
	1-634-432-11	FP-261 FLEXIBLE BOARD	

CAPACITOR

Ref.No	Part No.	Description	Remark
C401	1-135-202-21	TANTAL. CHIP 22MF 20% 4V	
C402	1-135-181-21	TANTAL. CHIP 4.7MF 20% 6.3V	
C403	1-126-206-11	ELECT CHIP 100MF 20% 6.3V	
C404	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C405	1-126-205-11	ELECT CHIP 47MF 20% 6.3V	
C406	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C409	1-126-205-11	ELECT CHIP 47MF 20% 6.3V	
C410	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C411	1-126-206-11	ELECT CHIP 100MF 20% 6.3V	
C412	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C413	1-135-181-21	TANTAL. CHIP 4.7MF 20% 6.3V	
C414	1-126-209-11	ELECT CHIP 100MF 20% 4V	
C415	1-135-202-21	TANTAL. CHIP 22MF 20% 4V	
C416	1-135-181-21	TANTAL. CHIP 4.7MF 20% 6.3V	
C417	1-135-177-21	TANTAL. CHIP 1MF 20% 25V	
C418	1-135-177-21	TANTAL. CHIP 1MF 20% 25V	
C419	1-124-584-00	ELECT 100MF 20% 10V	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C420	1-126-207-11	ELECT CHIP	33MF	20%	4V
C421	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C422	1-135-177-21	TANTAL. CHIP	1MF	20%	25V
C423	1-135-177-21	TANTAL. CHIP	1MF	20%	25V
C424	1-135-177-21	TANTAL. CHIP	1MF	20%	25V
C425	1-124-584-00	ELECT	100MF	20%	10V
C426	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C427	1-126-207-11	ELECT CHIP	33MF	20%	4V
C428	1-135-177-21	TANTAL. CHIP	1MF	20%	25V
C429	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C430	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C431	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C433	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C434	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C435	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C437	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C438	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C439	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C440	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C445	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C448	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C449	1-135-170-21	TANTAL. CHIP	6.8MF	20%	4V
C450	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C451	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C452	1-126-205-11	ELECT CHIP	47MF	20%	6.3V
C458	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C459	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C460	1-126-209-11	ELECT CHIP	100MF	20%	4V
C461	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C462	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C463	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C465	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C467	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C468	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C474	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C475	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C476	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C479	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C480	1-124-967-11	ELECT	10MF	20%	10V
C481	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C482	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C483	1-124-967-11	ELECT	10MF	20%	10V
C484	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C485	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C486	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C501	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C503	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C506	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C511	1-164-232-11	CERAMIC CHIP	0.01MF		50V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN401	1-565-879-11	PIN, CONNECTOR (PC BOARD) 7P	

DIODE

Ref.No	Part No.	Description	Remark
D401	8-719-404-46	DIODE MA110	

FILTER

Ref.No	Part No.	Description	Remark
FL401	1-236-550-11	BPF	
FL402	1-236-551-11	BPF	

IC

Ref.No	Part No.	Description	Remark
HIC401	8-741-100-98	IC SBX1506-21	
IC401	8-752-334-42	IC CXD2106Q	
IC402	8-759-009-22	IC MC14094BF	

COIL

Ref.No	Part No.	Description		Remark
L401	1-410-389-31	INDUCTOR CHIP	47UH	
L403	1-410-389-31	INDUCTOR CHIP	47UH	
L404	1-410-389-31	INDUCTOR CHIP	47UH	
L405	1-410-389-31	INDUCTOR CHIP	47UH	
L407	1-410-381-11	INDUCTOR CHIP	10UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q401	8-729-921-58	TRANSISTOR DTA144TU	
Q405	8-729-905-18	TRANSISTOR DTC144EU	
Q406	8-729-905-12	TRANSISTOR DTA144EU	
Q407	8-729-905-18	TRANSISTOR DTC144EU	
Q409	8-729-905-35	TRANSISTOR 2SC4081-R	
Q410	8-729-905-35	TRANSISTOR 2SC4081-R	
Q411	8-729-905-23	TRANSISTOR 2SA1576-R	
Q413	8-729-905-35	TRANSISTOR 2SC4081-R	
Q414	8-729-905-35	TRANSISTOR 2SC4081-R	
Q415	8-729-903-10	TRANSISTOR FMW1	
Q416	8-729-905-35	TRANSISTOR 2SC4081-R	
Q417	8-729-905-23	TRANSISTOR 2SA1576-R	
Q421	8-729-905-35	TRANSISTOR 2SC4081-R	
Q426	8-729-905-12	TRANSISTOR DTA144EU	
Q427	8-729-905-18	TRANSISTOR DTC144EU	
Q433	8-729-905-35	TRANSISTOR 2SC4081-R	
Q434	8-729-905-35	TRANSISTOR 2SC4081-R	
Q436	8-729-905-12	TRANSISTOR DTA144EU	
Q437	8-729-905-35	TRANSISTOR 2SC4081-R	
Q440	8-729-905-18	TRANSISTOR DTC144EU	
Q441	8-729-905-18	TRANSISTOR DTC144EU	
Q501	8-729-905-35	TRANSISTOR 2SC4081-R	
Q502	8-729-905-35	TRANSISTOR 2SC4081-R	

RESISTOR

Ref.No	Part No.	Description			Remark
R404	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W
R406	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W
R408	1-216-836-11	METAL GLAZE	18K	5%	1/16W
R409	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R410	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W
R411	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R413	1-216-835-11	METAL GLAZE	15K	5%	1/16W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R414	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R415	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R416	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R418	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R419	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R420	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R421	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R422	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R423	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R425	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R426	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R427	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R429	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R430	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R431	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R432	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R433	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R436	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R437	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R441	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R442	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R444	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R445	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R446	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R447	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R448	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R449	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R450	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R451	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R452	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R453	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R455	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R464	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R465	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R472	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R473	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R474	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R476	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R477	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R478	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R479	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R480	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R483	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R484	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R485	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R486	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R487	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R488	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R489	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R490	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R491	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R492	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R493	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R494	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R495	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R501	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R502	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R503	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R506	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R507	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R508	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R511	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R512	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R513	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R514	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R515	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R516	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R517	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R521	1-216-841-11	METAL GLAZE	47K	5%	1/16W	

TERMINAL

TP401	*1-535-622-11	PIN, TERMINAL
TP402	*1-535-622-11	PIN, TERMINAL

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*A-7062-329-A CD-20P BOARD, COMPLETE (Ref.No 4,000 Series)
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A-7068-173-A DT-77FP BOARD, COMPLETE (HIC121)

1-634-435-11 FP-265 FLEXIBLE BOARD
3-744-718-01 HOLDER (10), C

CAPACITOR

C101	1-126-200-11	ELECT CHIP	10MF	20%	35V
C102	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C104	1-128-013-11	ELECT CHIP	1MF	20%	50V
C105	1-126-607-11	ELECT CHIP	47MF	20%	4V
C107	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C110	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C111	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C112	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C113	1-128-013-11	ELECT CHIP	1MF	20%	50V
C114	1-128-008-11	ELECT CHIP	3.3MF	20%	35V
C115	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C121	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C122	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C123	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C124	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C125	1-126-205-11	ELECT CHIP	47MF	20%	6.3V
C126	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C127	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C128	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C129	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C130	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C131	1-162-638-11	CERAMIC CHIP	1MF		16V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C135	1-162-638-11	CERAMIC CHIP 1MF		16V
C136	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C137	1-162-919-11	CERAMIC CHIP 22PF	5%	50V
C138	1-162-962-11	CERAMIC CHIP 470PF	10%	50V
C140	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C141	1-162-942-11	CERAMIC CHIP 12PF	5%	50V
C142	1-135-145-11	TANTAL. CHIP 0.47MF	20%	35V
C144	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C147	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C187	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C188	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C189	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C190	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C191	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C192	1-126-100-11	ELECT 10MF	20%	6.3V

CONNECTOR

Ref.No	Part No.	Description
CN101	*1-565-529-21	PIN, CONNECTOR (PC BOARD) 4P

TRIMMER

Ref.No	Part No.	Description
CT121	1-141-424-31	CAP, ADJ
CT122	1-141-421-31	CAP, ADJ

DIODE

Ref.No	Part No.	Description
D101	8-719-404-46	DIODE MA110
D102	8-719-404-52	DIODE MA143
D122	8-719-404-46	DIODE MA110
D123	8-719-404-46	DIODE MA110
D124	8-719-404-32	DIODE MA141WA
D125	8-719-949-46	DIODE 1T32
D127	8-719-404-46	DIODE MA110
D128	8-719-404-46	DIODE MA110

IC

Ref.No	Part No.	Description
IC121	8-752-326-08	IC CXD1159Q

COIL

Ref.No	Part No.	Description
L101	1-412-063-21	INDUCTOR CHIP 68UH
L121	1-412-058-11	INDUCTOR CHIP 10UH
L122	1-412-058-11	INDUCTOR CHIP 10UH
L123	1-410-381-11	INDUCTOR CHIP 10UH
L182	1-412-058-11	INDUCTOR CHIP 10UH
L183	1-412-052-21	INDUCTOR CHIP 1UH
L184	1-412-058-11	INDUCTOR CHIP 10UH

TRANSISTOR

Ref.No	Part No.	Description
Q101	8-765-420-02	TRANSISTOR 2SK300-3
Q102	8-729-905-35	TRANSISTOR 2SC4081-R
Q121	8-729-402-84	TRANSISTOR XN4601
Q122	8-729-402-78	TRANSISTOR XN6401
Q123	8-729-402-19	TRANSISTOR XN6501
Q125	8-729-905-35	TRANSISTOR 2SC4081-R

Ref.No	Part No.	Description	Remark
Q126	8-729-402-84	TRANSISTOR XN4601	
Q127	8-729-402-84	TRANSISTOR XN4601	
Q129	8-729-905-23	TRANSISTOR 2SA1576-R	
Q130	8-729-905-35	TRANSISTOR 2SC4081-R	
Q131	8-729-402-84	TRANSISTOR XN4601	
Q132	8-729-402-84	TRANSISTOR XN4601	
Q133	8-729-402-84	TRANSISTOR XN4601	
Q135	8-729-402-84	TRANSISTOR XN4601	
Q136	8-729-402-45	TRANSISTOR UN5212	
Q137	8-729-402-84	TRANSISTOR XN4601	

RESISTOR

Ref.No	Part No.	Description			Remark
R101	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R102	1-216-840-11	METAL GLAZE	39K	5%	1/16W
R103	1-216-820-11	METAL GLAZE	820	5%	1/16W
R104	1-216-809-11	METAL GLAZE	100	5%	1/16W
R105	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W
R108	1-216-864-11	METAL GLAZE	0	5%	1/16W
R110	1-216-839-11	METAL GLAZE	33K	5%	1/16W
R111	1-216-839-11	METAL GLAZE	33K	5%	1/16W
R112	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R113	1-216-864-11	METAL GLAZE	0	5%	1/16W
R114	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R115	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R116	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R117	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R118	1-216-813-11	METAL GLAZE	220	5%	1/16W
R119	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R120	1-216-813-11	METAL GLAZE	220	5%	1/16W
R121	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R122	1-216-857-11	METAL GLAZE	1M	5%	1/16W
R124	1-216-839-11	METAL GLAZE	33K	5%	1/16W
R125	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R126	1-216-837-11	METAL GLAZE	22K	5%	1/16W
R127	1-216-820-11	METAL GLAZE	820	5%	1/16W
R128	1-216-843-11	METAL GLAZE	68K	5%	1/16W
R129	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R130	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R131	1-216-844-11	METAL GLAZE	82K	5%	1/16W
R132	1-216-844-11	METAL GLAZE	82K	5%	1/16W
R133	1-216-850-11	METAL GLAZE	270K	5%	1/16W
R136	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R138	1-216-836-11	METAL GLAZE	18K	5%	1/16W
R139	1-216-837-11	METAL GLAZE	22K	5%	1/16W
R140	1-216-837-11	METAL GLAZE	22K	5%	1/16W
R141	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R142	1-216-837-11	METAL GLAZE	22K	5%	1/16W
R143	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R144	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R145	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R148	1-216-849-11	METAL GLAZE	220K	5%	1/16W
R149	1-216-864-11	METAL GLAZE	0	5%	1/16W
R154	1-216-864-11	METAL GLAZE	0	5%	1/16W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R155	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R156	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R157	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R158	1-216-862-11	METAL GLAZE	2.7M	5%	1/16W	
R159	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R160	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R162	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R163	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R164	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R165	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R166	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R167	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R168	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R169	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R171	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R172	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R173	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R181	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R182	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R183	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R184	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R185	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R186	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R187	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R188	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R189	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R190	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R191	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R192	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R193	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R194	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R195	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R196	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R197	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R198	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R199	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R200	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R201	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R202	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R203	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R204	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R205	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R206	1-216-681-11	METAL CHIP	18K	0.50%	1/10W	
R207	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R208	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R209	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R210	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R215	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R216	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R217	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R218	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R219	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R220	1-216-835-11	METAL GLAZE	15K	5%	1/16W	

Ref.No	Part No.	Description				Remark
R221	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R222	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R226	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R229	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R230	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R233	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R234	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R235	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R236	1-216-833-11	METAL GLAZE	10K	5%	1/16W	

CRYSTAL

X121	1-579-076-21	VIBRATOR, CRYSTAL
X122	1-567-733-11	VIBRATOR, CRYSTAL

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*A-7062-330-A AF-54P BOARD, COMPLETE (Ref.No 3,000 Series)
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1-634-436-11 FP-266 FLEXIBLE BOARD

CAPACITOR

C801	1-163-059-00	CERAMIC CHIP	0.01MF		50V
C802	1-163-059-00	CERAMIC CHIP	0.01MF		50V
C803	1-163-059-00	CERAMIC CHIP	0.01MF		50V
C804	1-164-634-11	CERAMIC CHIP	1MF		16V
C805	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C806	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C807	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C808	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C810	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C811	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C812	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C813	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C814	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C815	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C816	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C817	1-164-634-11	CERAMIC CHIP	1MF		16V
C818	1-164-634-11	CERAMIC CHIP	1MF		16V
C819	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C820	1-164-634-11	CERAMIC CHIP	1MF		16V
C821	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C822	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C823	1-162-954-11	CERAMIC CHIP	120PF	5%	50V
C824	1-164-634-11	CERAMIC CHIP	1MF		16V
C825	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C826	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C827	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C829	1-164-634-11	CERAMIC CHIP	1MF		16V
C832	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C833	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C834	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C835	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C837	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
C839	1-135-091-00	TANTAL. CHIP 1MF 20%	16V
		CONNECTOR	
CN801	*1-565-529-21	PIN, CONNECTOR (PC BOARD) 4P	
		DIODE	
D801	8-719-404-46	DIODE MA110	
		FILTER	
FL51	1-236-209-11	FILTER, LOW PASS	
FL851	1-236-209-11	FILTER, LOW PASS	
FL852	1-236-209-11	FILTER, LOW PASS	
FL852	1-236-209-11	FILTER, LOW PASS	
		IC	
IC801	8-752-334-68	IC CXD1205R	
IC802	8-759-148-87	IC CXA8016M	
IC803	8-752-334-49	IC CXD1172AM	
IC804	8-759-998-96	IC LM324DR	
IC805	8-759-998-96	IC LM324DR	
		COIL	
L801	1-410-655-31	INDUCTOR CHIP 120UH	
		TRANSISTOR	
Q801	8-729-905-35	TRANSISTOR 2SC4081-R	
Q802	8-729-905-35	TRANSISTOR 2SC4081-R	
Q806	8-729-905-35	TRANSISTOR 2SC4081-R	
Q807	8-729-905-35	TRANSISTOR 2SC4081-R	
Q808	8-729-905-35	TRANSISTOR 2SC4081-R	
Q809	8-729-402-45	TRANSISTOR UN5212	
		RESISTOR	
R801	1-216-679-11	METAL CHIP 15K 0.50% 1/10W	
R802	1-216-679-11	METAL CHIP 15K 0.50% 1/10W	
R803	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
R804	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
R805	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R806	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R807	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R808	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R809	1-216-134-00	METAL GLAZE 2.2 5% 1/8W	
R810	1-216-144-00	METAL GLAZE 5.6 5% 1/8W	
R811	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R816	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R819	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R820	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R821	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R822	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R823	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R827	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R828	1-216-833-11	METAL GLAZE 10K 5% 1/16W	

Ref.No	Part No.	Description	Remark
R829	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R830	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R831	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R832	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R833	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R834	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R835	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R836	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R837	1-216-673-11	METAL CHIP 8.2K 0.50% 1/10W	
R838	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R839	1-216-673-11	METAL CHIP 8.2K 0.50% 1/10W	
R840	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R841	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R842	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R843	1-216-844-11	METAL GLAZE 82K 5% 1/16W	
R844	1-216-819-11	METAL GLAZE 680 5% 1/16W	
R845	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R846	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R847	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R848	1-216-828-11	METAL GLAZE 3.9K 5% 1/16W	
R849	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R850	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R851	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R852	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R853	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R854	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R858	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R860	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R862	1-216-679-11	METAL CHIP 15K 0.50% 1/10W	
R863	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R865	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R866	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R867	1-216-635-11	METAL CHIP 220 0.50% 1/10W	
R868	1-216-659-11	METAL CHIP 2.2K 0.50% 1/10W	
**			
	*A-7062-331-A	VC-67P BOARD, COMPLETE (Ref.No 4,000 Series) ***********************	
	*A-7068-180-A	MX-12AP BOARD, COMPLETE (HIC)	
	*3-744-763-01	CASE, SHIELD, VC	
		CAPACITOR	
C301	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C302	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C401	1-164-634-11	CERAMIC CHIP 1MF	16V
C402	1-164-634-11	CERAMIC CHIP 1MF	16V
C403	1-164-156-11	CERAMIC CHIP 0.1MF	25V
C404	1-164-634-11	CERAMIC CHIP 1MF	16V
C406	1-164-156-11	CERAMIC CHIP 0.1MF	25V
C407	1-164-634-11	CERAMIC CHIP 1MF	16V
C408	1-162-964-11	CERAMIC CHIP 0.001MF 10%	50V
C409	1-164-156-11	CERAMIC CHIP 0.1MF	25V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C410	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C411	1-124-566-11	ELECT 120MF	20%	6.3V
C412	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C413	1-164-634-11	CERAMIC CHIP 1MF		16V
C414	1-162-917-11	CERAMIC CHIP 15PF	5%	50V
C415	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C416	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C417	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C419	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C420	1-162-941-11	CERAMIC CHIP 10PF	0.5PF	50V
C501	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C502	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C503	1-164-634-11	CERAMIC CHIP 1MF		16V
C506	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C507	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C508	1-135-072-21	TANTAL. CHIP 0.22MF	20%	35V
C509	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C510	1-128-004-11	ELECT CHIP 10MF	20%	16V
C511	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C512	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C513	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C514	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C517	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C518	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C519	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C520	1-135-071-21	TANTAL. CHIP 0.15MF	10%	35V
C521	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C651	1-126-217-11	ELECT CHIP 15MF	20%	10V
C654	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C655	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C656	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C657	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C658	1-128-004-11	ELECT CHIP 10MF	20%	16V
C659	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C660	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C661	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C662	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C663	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C664	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C665	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C666	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C667	1-164-156-11	CERAMIC CHIP 0.1MF		25V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN301	1-568-338-11	CONNECTOR, BOARD TO BOARD 24P	
CN302	1-568-331-11	CONNECTOR, BOARD TO BOARD 10P	
CN303	1-566-533-11	CONNECTOR, FPC (ZIF) 17P	
CN304	*1-566-184-11	PIN, CONNECTOR (PC BOARD) 5P	
CN305	1-566-528-21	CONNECTOR, FPC (ZIF) 12P	
CN306	*1-565-875-11	PIN, CONNECTOR (PC BOARD) 3P	
CN307	*1-565-876-11	PIN, CONNECTOR (PC BOARD) 4P	
CN308	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P	
CN651	*1-566-187-11	PIN, CONNECTOR (PC BOARD) 8P	
CN652	1-565-527-11	PIN, CONNECTOR (PC BOARD) 2P	
CN653	1-565-527-11	PIN, CONNECTOR (PC BOARD) 2P	
CN654	*1-565-529-21	PIN, CONNECTOR (PC BOARD) 4P	
CN655	*1-566-184-11	PIN, CONNECTOR (PC BOARD) 5P	

DIODE

Ref.No	Part No.	Description	Remark
D501	8-719-404-46	DIODE MA110	
D502	8-719-404-46	DIODE MA110	
D503	8-719-404-46	DIODE MA110	
D504	8-719-404-46	DIODE MA110	

FILTER

Ref.No	Part No.	Description	Remark
FL301	1-236-759-21	FILTER, LOW PASS (TRAP)	
FL302	1-415-731-21	DELAY LINE, LC (YH)	
FL303	1-415-732-21	DELAY LINE, LC (200NS)	
FL401	1-415-763-21	DELAY LINE, LC	
FL402	1-415-730-21	DELAY LINE, LC (100NS)	

IC

Ref.No	Part No.	Description	Remark
IC301	8-759-946-00	IC MB88341PFV	
IC401	8-752-038-XX	IC CXA1392R	
IC501	8-759-037-46	IC MC68HC11E9FU	
IC502	8-759-008-95	IC MC14028BF	
IC504	8-759-946-00	IC MB88341PFV	
IC505	8-759-998-96	IC LM324D	
IC507	8-759-030-74	IC SC14S66F	
IC508	8-759-937-56	IC S-8054ALB-LM-S	
IC509	8-759-932-54	IC MC14066BF	
IC510	8-759-998-96	IC LM324D	
IC651	8-759-981-82	IC RC3414M	
IC652	8-759-037-20	IC MPC1737MR	
IC653	8-759-998-98	IC LM358D	
IC655	8-759-009-07	IC MC14053BF	
IC656	8-759-998-96	IC LM324D	

COIL

Ref.No	Part No.	Description	Remark
L401	1-410-391-11	INDUCTOR CHIP 68UH	
L502	1-412-058-11	INDUCTOR CHIP 10UH	
L503	1-412-062-11	INDUCTOR CHIP 47UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q301	8-729-905-23	TRANSISTOR 2SA1576-R	
Q302	8-729-905-23	TRANSISTOR 2SA1576-R	
Q303	8-729-402-84	TRANSISTOR XN4601	
Q401	8-729-402-84	TRANSISTOR XN4601	
Q402	8-729-402-84	TRANSISTOR XN4601	
Q403	8-729-905-23	TRANSISTOR 2SA1576-R	
Q404	8-729-905-35	TRANSISTOR 2SC4081-R	
Q501	8-729-420-50	TRANSISTOR UN5215	
Q502	8-729-420-50	TRANSISTOR UN5215	
Q503	8-729-420-50	TRANSISTOR UN5215	
Q504	8-729-403-10	TRANSISTOR XN6215	
Q505	8-729-403-10	TRANSISTOR XN6215	
Q506	8-729-420-07	TRANSISTOR XN6213	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
Q507	8-729-420-50	TRANSISTOR UN5215	
Q508	8-729-402-78	TRANSISTOR XN6401	
Q509	8-729-403-10	TRANSISTOR XN6215	
Q510	8-729-905-35	TRANSISTOR 2SC4081-R	
Q513	8-729-402-84	TRANSISTOR XN4601	
Q514	8-729-905-35	TRANSISTOR 2SC4081-R	
Q515	8-729-402-84	TRANSISTOR XN4601	
Q516	8-729-905-35	TRANSISTOR 2SC4081	
Q517	8-729-905-23	TRANSISTOR 2SA1576	
Q651	8-729-905-23	TRANSISTOR 2SA1576	
Q652	8-729-402-42	TRANSISTOR UN5213	
Q653	8-729-920-79	TRANSISTOR 2SB1132-QR	
Q654	8-729-905-35	TRANSISTOR 2SC4081-R	
Q655	8-729-905-35	TRANSISTOR 2SC4081-R	
Q656	8-729-905-35	TRANSISTOR 2SC4081-R	
Q657	8-729-402-84	TRANSISTOR XN4601	
Q658	8-729-402-84	TRANSISTOR XN4601	

RESISTOR

Ref.No	Part No.	Description				Remark
R301	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R302	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R304	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R307	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R311	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R312	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R313	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R314	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R316	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R318	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R321	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R322	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R325	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R327	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R328	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R329	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R401	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R403	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R404	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R405	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R406	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R407	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R410	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R414	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R415	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R416	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R417	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R418	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R419	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R420	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R421	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R422	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R427	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R428	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R429	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R432	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R435	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R437	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R440	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R501	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R502	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R503	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R504	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R506	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R508	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R509	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R510	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R511	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R513	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R514	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R515	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R517	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R518	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R519	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R520	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R521	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R522	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R523	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R524	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R525	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R526	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R527	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R528	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R529	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R530	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R531	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R532	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R533	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R534	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R535	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R536	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R537	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R546	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R547	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R550	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R551	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R552	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R553	1-216-685-11	METAL CHIP	27K	0.50%	1/10W	
R554	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R555	1-216-336-11	METAL GLAZE	47K	1%	1/10W	
R556	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R557	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R560	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R562	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R649	1-216-309-00	METAL GLAZE	5.6	5%	1/10W	
R650	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R652	1-216-835-11	METAL GLAZE	15K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R653	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R654	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R655	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R656	1-216-134-00	METAL GLAZE	2.2	5%	1/8W	
R657	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R658	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R659	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R660	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R661	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R662	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R663	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R664	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R665	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R666	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R667	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R668	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R669	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R670	1-216-807-11	METAL GLAZE	68	5%	1/16W	
R672	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R676	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R678	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R679	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R680	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R681	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R682	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R683	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R684	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R685	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R686	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R687	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R688	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R689	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R690	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R691	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R692	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R694	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R695	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R698	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R699	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R700	1-216-854-11	METAL GLAZE	560K	5%	1/16W	

CRYSTAL

Ref.No	Part No.	Description
X501	1-578-689-21	VIBRATOR

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Ref.No	Part No.	Description	Remark
	*A-7062-332-B	FD-15P BOARD, COMPLETE ***********************	(Ref.No 5,000 Series)
	*3-744-736-01	HOLDER, TALLY	
	3-744-737-01	TERMINAL (A), L	
	3-744-738-01	TERMINAL (B), L	
	*3-744-761-01	HOLDER, LCD	
	3-746-207-01	COVER, LITIUM	

CAPACITOR

Ref.No	Part No.	Description			Remark
C201	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C202	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C203	1-135-149-21	TANTAL. CHIP	2.2MF	20%	10V
C204	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C205	1-162-971-11	CERAMIC CHIP	0.001MF		50V
C206	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C207	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C208	1-162-961-11	CERAMIC CHIP	330PF	10%	50V
C209	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C210	1-135-216-11	TANTAL. CHIP	10MF	20%	10V
C211	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C212	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C213	1-135-216-11	TANTAL. CHIP	10MF	20%	10V
C214	1-162-971-11	CERAMIC CHIP	0.001MF		50V
C215	1-135-149-21	TANTAL. CHIP	2.2MF	20%	10V
C216	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C217	1-135-149-21	TANTAL. CHIP	2.2MF	20%	10V
C218	1-164-227-11	CERAMIC CHIP	0.022MF	10%	25V
C221	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C222	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C223	1-135-215-21	TANTAL. CHIP	6.8MF	20%	16V
C224	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C230	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C231	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C300	1-135-145-11	TANTAL. CHIP	0.47MF	20%	35V
C301	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C302	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C303	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C304	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C309	1-135-145-11	TANTAL. CHIP	0.47MF	20%	35V
C310	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C311	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C312	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C313	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C332	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C333	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C334	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C335	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C336	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C337	1-135-149-21	TANTAL. CHIP	2.2MF	20%	10V
C338	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C339	1-135-145-11	TANTAL. CHIP	0.47MF	20%	35V
C340	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C341	1-164-227-11	CERAMIC CHIP	0.022MF	10%	25V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C342	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C343	1-162-917-11	CERAMIC CHIP 15PF	5%	50V
C344	1-164-227-11	CERAMIC CHIP 0.022MF	10%	25V
C345	1-162-995-11	CERAMIC CHIP 0.022MF		50V
C346	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C347	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C348	1-162-915-11	CERAMIC CHIP 10PF	0.5PF	50V
C349	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C350	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C351	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C352	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C353	1-162-638-11	CERAMIC CHIP 1MF		16V
C354	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C355	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C356	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C357	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C361	1-162-921-11	CERAMIC CHIP 33PF	5%	50V
C370	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C371	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C372	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
		CONNECTOR		
CN201	1-569-035-11	CONNECTOR, FPC (ZIF) 30P		
		TRIMMER		
CT201	1-141-424-31	CAP, ADJ		
CT301	1-141-424-31	CAP, ADJ		
CT302	1-141-424-31	CAP, ADJ		
		DIODE		
D201	8-719-940-45	DIODE DWA010		
D202	8-719-404-46	DIODE MA110		
D203	8-719-938-72	DIODE SB01-05CP		
D204	8-719-420-36	DIODE MA151A		
D205	8-719-404-46	DIODE MA110		
D206	8-719-812-41	DIODE TLR124		
		IC		
IC201	8-759-151-78	IC UPD75316GF-076-3B9		
IC202	8-759-999-02	IC TL1596CDSB		
IC203	8-759-145-63	IC UPD7564G-540		
IC205	8-759-937-54	IC S-81250HG-RD-S		
IC206	8-759-937-56	IC S-8054ALB-LM-S		
IC301	8-759-998-30	IC CF79028PG		
IC302	8-752-326-23	IC CXK58257M-10L		
IC303	8-752-039-49	IC CXA1393AN		
IC304	8-759-634-47	IC M51285BGP		
		COIL		
L201	1-412-058-11	INDUCTOR CHIP 10UH		
L202	1-410-393-11	INDUCTOR CHIP 100UH		
L300	1-412-058-11	INDUCTOR CHIP 10UH		
L301	1-412-187-11	INDUCTOR 18UH		

Ref.No	Part No.	Description		Remark
L302	1-410-377-31	INDUCTOR CHIP 4.7UH		
L310	1-410-377-31	INDUCTOR CHIP 4.7UH		
L311	1-410-393-11	INDUCTOR CHIP 100UH		
		DISPLAY PANEL		
ND201	1-808-990-41	DISPLAY PANEL, LIQUID CRYSTAL		
		TRANSISTOR		
Q201	8-729-904-20	TRANSISTOR FMA2		
Q202	8-729-905-18	TRANSISTOR DTC144EU		
Q203	8-729-905-24	TRANSISTOR 2SA1576-S		
Q204	8-729-905-15	TRANSISTOR DTC144WU		
Q205	8-729-109-44	TRANSISTOR 2SK94		
Q206	8-729-402-78	TRANSISTOR XN6401		
Q207	8-729-402-19	TRANSISTOR XN6501		
Q208	8-729-402-78	TRANSISTOR XN6401		
Q209	8-729-403-10	TRANSISTOR XN6215		
Q210	8-729-905-XX	TRANSISTOR DTC114TU		
Q211	8-729-100-66	TRANSISTOR 2SC1623		
Q212	8-729-905-XX	TRANSISTOR DTC114TU		
Q213	8-729-905-18	TRANSISTOR DTC144EU		
Q214	8-729-905-12	TRANSISTOR DTA144EU		
Q301	8-729-925-91	TRANSISTOR DTC115EU		
Q311	8-729-905-35	TRANSISTOR 2SC4081-R		
Q312	8-729-905-35	TRANSISTOR 2SC4081-R		
Q313	8-729-905-18	TRANSISTOR DTC144EU		
Q314	8-729-905-35	TRANSISTOR 2SC4081-R		
Q316	8-729-905-12	TRANSISTOR DTA144EU		
Q317	8-729-905-24	TRANSISTOR 2SA1576-S		
		RESISTOR		
R201	1-216-821-11	METAL GLAZE 1K	5%	1/16W
R202	1-216-821-11	METAL GLAZE 1K	5%	1/16W
R203	1-216-821-11	METAL GLAZE 1K	5%	1/16W
R204	1-216-821-11	METAL GLAZE 1K	5%	1/16W
R207	1-216-821-11	METAL GLAZE 1K	5%	1/16W
R208	1-216-833-11	METAL GLAZE 10K	5%	1/16W
R209	1-216-833-11	METAL GLAZE 10K	5%	1/16W
R210	1-216-821-11	METAL GLAZE 1K	5%	1/16W
R218	1-216-841-11	METAL GLAZE 47K	5%	1/16W
R219	1-216-864-11	METAL GLAZE 0	5%	1/16W
R220	1-216-819-11	METAL GLAZE 680	5%	1/16W
R221	1-216-809-11	METAL GLAZE 100	5%	1/16W
R222	1-216-821-11	METAL GLAZE 1K	5%	1/16W
R223	1-216-821-11	METAL GLAZE 1K	5%	1/16W
R224	1-216-821-11	METAL GLAZE 1K	5%	1/16W
R225	1-216-851-11	METAL GLAZE 330K	5%	1/16W
R242	1-216-841-11	METAL GLAZE 47K	5%	1/16W
R244	1-216-821-11	METAL GLAZE 1K	5%	1/16W
R245	1-216-821-11	METAL GLAZE 1K	5%	1/16W
R246	1-216-833-11	METAL GLAZE 10K	5%	1/16W
R247	1-216-833-11	METAL GLAZE 10K	5%	1/16W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R248	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R249	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R250	1-216-596-11	METAL GLAZE 2.7K 1% 1/10W	
R251	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R252	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R253	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R254	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R255	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R256	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R257	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R258	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R266	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R267	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R269	1-216-843-11	METAL GLAZE 68K 5% 1/16W	
R270	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R271	1-216-861-11	METAL GLAZE 2.2M 5% 1/16W	
R272	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R273	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R274	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R275	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R276	1-216-851-11	METAL GLAZE 330K 5% 1/16W	
R277	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R278	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R279	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R280	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R281	1-216-852-11	METAL GLAZE 390K 5% 1/16W	
R282	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R283	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R284	1-216-855-11	METAL GLAZE 680K 5% 1/16W	
R285	1-216-855-11	METAL GLAZE 680K 5% 1/16W	
R286	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R287	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R288	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R289	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R290	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R295	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R296	1-216-814-11	METAL GLAZE 270 5% 1/16W	
R297	1-216-814-11	METAL GLAZE 270 5% 1/16W	
R300	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R304	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R306	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R309	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R311	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R313	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R320	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R321	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R322	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R324	1-216-843-11	METAL GLAZE 68K 5% 1/16W	
R331	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R332	1-216-814-11	METAL GLAZE 270 5% 1/16W	
R333	1-216-806-11	METAL GLAZE 56 5% 1/16W	
R334	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R335	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	

Ref.No	Part No.	Description	Remark
R336	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R338	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R339	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R340	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R341	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
R342	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R343	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R344	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R345	1-216-826-11	METAL GLAZE 2.7K 5% 1/16W	
R346	1-216-826-11	METAL GLAZE 2.7K 5% 1/16W	
R347	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R348	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R349	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R350	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R351	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R352	1-216-847-11	METAL GLAZE 150K 5% 1/16W	
R356	1-216-822-11	METAL GLAZE 1.2K 5% 1/16W	
R357	1-216-840-11	METAL GLAZE 39K 5% 1/16W	
R358	1-216-840-11	METAL GLAZE 39K 5% 1/16W	
R359	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
R360	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R361	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R364	1-216-815-11	METAL GLAZE 330 5% 1/16W	
R365	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R366	1-216-826-11	METAL GLAZE 2.7K 5% 1/16W	
		NETWORK RESISTOR	
RB201	1-236-412-11	NETWORK, RES 1.0K	
RB202	1-236-424-11	NETWORK, RES 10K	
RB203	1-236-424-11	NETWORK, RES 10K	
RB204	1-236-424-11	NETWORK, RES 10K	
RB205	1-236-412-11	NETWORK, RES 1.0K	
RB207	1-236-432-11	NETWORK, RES 47K	
RB208	1-236-424-11	NETWORK, RES 10K	
RB209	1-236-436-11	NETWORK, RES 100K	
RB210	1-236-436-11	NETWORK, RES 100K	
RB211	1-236-412-11	NETWORK, RES 1.0K	
RB212	1-236-424-11	NETWORK, RES 10K	
RB213	1-236-424-11	NETWORK, RES 10K	
RB214	1-236-436-11	NETWORK, RES 100K	
RB215	1-236-436-11	NETWORK, RES 100K	
		VARIABLE RESISTOR	
RV301	1-238-855-11	RES, ADJ, CERMET 4.7K	
RV302	1-238-858-11	RES, ADJ, CERMET 47K	
		SWITCH	
S201	1-571-684-11	SWITCH, TACTIL (IRIS)	
S202	1-571-684-11	SWITCH, TACTIL (TITLE 1)	
S203	1-571-684-11	SWITCH, TACTIL (TITLE 2)	
S204	1-571-684-11	SWITCH, TACTIL (MEMORY)	
S205	1-571-684-11	SWITCH, TACTIL (COLOR/MODE)	
S206	1-571-684-11	SWITCH, TACTIL (DATE (+))	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
S207	1-571-684-11	SWITCH, TACTIL (TIME NEXT)	
S208	1-571-684-11	SWITCH, TACTIL (PROGRAM AE)	
S209	1-571-684-11	SWITCH, TACTIL (WHT BAL)	
S210	1-572-319-11	SWITCH, ROTARY (CONTROL)	
S211	1-571-684-11	SWITCH, TACTIL (GAIN)	
S212	1-571-684-11	SWITCH, TACTIL (FOCUS)	
S213	1-571-684-11	SWITCH, TACTIL (PUSH AUTO)	
S215	1-571-684-11	SWITCH, TACTIL (SHUTTER SPEED)	
S216	1-571-684-11	SWITCH, TACTIL ( )	
S217	1-572-285-11	SWITCH, SLIDE (AUTO LOCK)	
S218	1-571-684-11	SWITCH, TACTIL (FADER)	

THERMISTOR

TH300	1-800-200-00	THERMISTOR

TERMINAL PIN

TP201	*1-535-622-11	PIN, TERMINAL
TP202	*1-535-622-11	PIN, TERMINAL

CRYSTAL

X201	1-527-997-21	VIBRATOR, CRYSTAL (32.77KHz)
X202	1-578-713-21	VIBLATOR, CERAMIC (4.19MHz)
X203	1-577-163-21	VIBLATOR, CERAMIC (700KHz)
X301	1-567-733-11	VIBRATOR, CRYSTAL (17MHz)

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*A-7062-333-A MC-43P BOARD, COMPLETE (Ref.No 6,000 Series)
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CAPACITOR

C801	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C802	1-162-587-11	CERAMIC CHIP	0.039MF	10%	25V
C803	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C804	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C805	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C806	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C807	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C808	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C809	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C810	1-162-587-11	CERAMIC CHIP	0.039MF	10%	25V
C811	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C812	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C813	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C814	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C815	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C816	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C817	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C820	1-135-177-21	TANTAL. CHIP	1MF	20%	25V
C821	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V
C822	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C823	1-135-177-21	TANTAL. CHIP	1MF	20%	25V
C824	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V
C825	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C826	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C827	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C828	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C829	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C830	1-126-205-11	ELECT CHIP	47MF	20%	6.3V
C834	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C835	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C836	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C838	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C839	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C840	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C841	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C842	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C843	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C844	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C845	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V

CONNECTOR

CN802	1-568-364-21	CONNECTOR, BOARD TO BOARD 12P

IC

IC801	8-759-111-46	IC UPC4572G2

TRANSISTOR

Q801	8-759-109-44	TRANSISTOR 2SK94
Q802	8-729-905-35	TRANSISTOR 2SC4081-R
Q803	8-729-905-12	TRANSISTOR DTA144EU
Q805	8-729-905-35	TRANSISTOR 2SC4081-R
Q806	8-729-109-44	TRANSISTOR 2SK94
Q807	8-729-905-35	TRANSISTOR 2SC4081-R
Q808	8-729-905-12	TRANSISTOR DTA144EU
Q810	8-729-905-35	TRANSISTOR 2SC4081-R
Q811	8-729-905-12	TRANSISTOR DTA144EU
Q812	8-729-905-35	TRANSISTOR 2SC4081-R
Q813	8-729-904-07	TRANSISTOR FMG2
Q815	8-729-905-35	TRANSISTOR 2SC4081-R
Q816	8-729-905-23	TRANSISTOR 2SA1576-R
Q817	8-729-905-35	TRANSISTOR 2SC4081-R

RESISTOR

R802	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R803	1-216-857-11	METAL GLAZE	1M	5%	1/16W
R804	1-216-844-11	METAL GLAZE	82K	5%	1/16W
R805	1-216-849-11	METAL GLAZE	220K	5%	1/16W
R806	1-216-835-11	METAL GLAZE	15K	5%	1/16W
R807	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R808	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W
R810	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R811	1-216-857-11	METAL GLAZE	1M	5%	1/16W
R812	1-216-844-11	METAL GLAZE	82K	5%	1/16W
R813	1-216-849-11	METAL GLAZE	220K	5%	1/16W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R814	1-216-835-11	METAL GLAZE 15K 5% 1/16W	
R815	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R816	1-216-826-11	METAL GLAZE 2.7K 5% 1/16W	
R817	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R818	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R819	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R820	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
R821	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
R822	1-216-846-11	METAL GLAZE 120K 5% 1/16W	
R823	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R824	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R825	1-216-843-11	METAL GLAZE 68K 5% 1/16W	
R826	1-216-846-11	METAL GLAZE 120K 5% 1/16W	
R827	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R828	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R829	1-216-843-11	METAL GLAZE 68K 5% 1/16W	
R830	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R831	1-216-842-11	METAL GLAZE 56K 5% 1/16W	
R832	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R833	1-216-842-11	METAL GLAZE 56K 5% 1/16W	
R834	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R835	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R837	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R838	1-216-836-11	METAL GLAZE 18K 5% 1/16W	
R839	1-216-830-11	METAL GLAZE 5.6K 5% 1/16W	
R840	1-216-306-11	METAL GLAZE 3.9 5% 1/10W	
R841	1-216-810-11	METAL GLAZE 120 5% 1/16W	
R842	1-216-810-11	METAL GLAZE 120 5% 1/16W	

SWITCH

SW801	1-570-870-11	SWITCH, SLIDE (BUILT IN MIC)	

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*A-7071-214-A FC-28P BOARD, COMPLETE (Ref.No 7,000 Series)
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CONNECTOR

CN601	1-566-532-11	CONNECTOR, FPC (ZIF) 16P	
CN602	1-569-476-11	CONNECTOR, FPC(SMT TYPE ZIF)12P	
CN603	*1-565-875-11	PIN, CONNECTOR (PC BOARD) 3P	
CN604	*1-566-764-11	PIN, CONNECTOR (PC BOARD) 9P	

DIODE

D601	8-719-940-45	DIODE DWA010	

RESISTOR

R601	1-216-017-00	METAL GLAZE 47 5% 1/10W	

SWITCH

Ref.No	Part No.	Description	Remark
S601	1-571-787-41	SWITCH, TACTILE (REC START/STOP)	
S602	1-571-787-11	SWITCH, TACTILE (COUNTER RESET)	
S603	1-571-787-11	SWITCH, TACTILE (ZERO MEM)	
S604	1-571-787-11	SWITCH, TACTILE (EDITSEARCH +)	
S605	1-571-787-11	SWITCH, TACTILE (EDITSEARCH -)	
S606	1-571-787-11	SWITCH, TACTILE (INDEX MARK)	

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*A-7071-215-A MJ-40P BOARD, COMPLETE (Ref.No 6,000 Series)
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CAPACITOR

C751	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C752	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C753	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C754	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C755	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C756	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	

CONNECTOR

CN751	*1-568-332-11	CONNECTOR, BOARD TO BOARD 12P	
CN752	*1-565-543-11	PIN, CONNECTOR (PC BOARD) 4P	

JACK

J751	1-507-899-00	JACK (SMALL TYPE) (EXT MIC)	
J752	1-563-454-11	JACK, MINIATURE (DC OUT)	

COIL

L751	1-410-369-11	INDUCTOR CHIP 1UH	
L752	1-410-369-11	INDUCTOR CHIP 1UH	
L753	1-410-369-11	INDUCTOR CHIP 1UH	
L754	1-410-369-11	INDUCTOR CHIP 1UH	
L755	1-410-369-11	INDUCTOR CHIP 1UH	

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1-634-422-11 SW-120P BOARD (Ref.No 7,000 Series)
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CONNECTOR

CN701	*1-566-764-11	PIN, CONNECTOR (PC BOARD) 9P	
CN702	*1-566-761-11	PIN, CONNECTOR (PC BOARD) 6P	
CN703	1-575-846-11	CONNECTOR, FPC (NON ZIF) 6P	

DIODE

D701	8-719-977-34	DIODE DTZ12	
D702	8-719-977-34	DIODE DTZ12	
D705	8-719-977-34	DIODE DTZ12	

JACK

J701	1-507-929-11	JACK (HEADPHONE)	
J702	1-565-276-11	JACK, ULTRA SMALL 1P (REMOTE)	

COIL

L701	1-410-369-11	INDUCTOR CHIP 1UH	
L702	1-410-369-11	INDUCTOR CHIP 1UH	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
L703	1-410-369-11	INDUCTOR CHIP 1UH	
L704	1-410-369-11	INDUCTOR CHIP 1UH	
L705	1-410-369-11	INDUCTOR CHIP 1UH	
L706	1-410-369-11	INDUCTOR CHIP 1UH	

SWITCH

Ref.No	Part No.	Description	Remark
S701	1-570-870-11	SWITCH, SLIDE (STANDBY)	
S702	1-571-838-11	SWITCH, TACTIL (REC START/STOP)	

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MISCELLANEOUS
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Ref.No	Part No.	Description	Remark
⚠.	1-466-230-21	CONVERTER UNIT, D/D	
	1-542-143-11	MICROPHONE (STEREO TYPE)	
	1-547-381-12	FILTER BLOCK, OPTICAL	
	1-547-413-11	LENS, ZOOM (VCL-8508XG)	
	1-569-346-11	CONNECTOR, FPC (TRANSLATION) 10P	
	1-569-347-11	CONNECTOR, FPC (TRANSLATION) 13P	
	1-572-173-11	SWITCH, SLIDE (ENCODER)	
	1-572-253-11	SWITCH, SLIDE (ENCODER)	
	1-572-320-11	SWITCH, PUSH	
	1-628-060-12	FP-89 FLEXIBLE BOARD	
	1-628-061-12	FP-90 FLEXIBLE BOARD	
	1-634-011-11	FP-264 FLEXIBLE BOARD	
	1-634-433-11	FP-262 FLEXIBLE BOARD	
	1-808-505-12	SENSOR (DEW)	
	8-719-979-92	DIODE SPI-315-25-CD	
D301	8-719-820-44	PHOTO COUPLER TLP907-0	
D302	8-719-940-81	DIODE GL452S	
D303	8-719-820-44	PHOTO COUPLER TLP907-0	
IC101	※8-752-602-90	IC ICX039AK-1	
⚠L901-1.	1-451-310-21	DEFLECTION YOKE (B/W)	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-208-A	MOTOR ASSY, THREADING (LOADING)	
Q301	8-729-906-48	EE-TP109	
Q302	8-729-906-48	EE-TP109	
S302	1-572-298-11	SWITCH, PUSH	
S901	1-571-099-11	SWITCH	
⚠V901-1.	1-546-085-11	CATHODE-RAY TUBE, B/W	
⚠V901-2.	1-452-482-11	CRT ASSY (M91JYZ60WB)	

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ACCESSORIES AND PACKING MATERIALS
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Part No.	Description	Remark
*1-465-505-51	COMMANDER, REMOTE (RMT-501)	
*1-575-335-21	CORD, CONNECTION	
1-575-795-11	CORD, CONNECTION	
*3-340-514-01	BAG, PROTECTION	
3-701-625-00	BAG, POLYETHYLENE	
*3-744-727-01	CUSHION (UPPER)	
*3-744-728-01	CUSHION (LOWER)	
3-751-608-11	MANUAL, INSTRUCTION (ENGLISH) (AEP/UK/E MODEL)	
3-751-608-41	MANUAL, INSTRUCTION (FRENCH/GERMAN/SPANISH) (AEP MODEL)	
3-751-608-51	MANUAL, INSTRUCTION (DUTCH/SWEDISH/ITALIAN) (AEP MODEL)	
3-752-403-41	MANUAL, INSTRUCTION (ENGLISH) (FRENCH/GERMAN/SPANISH) (AUS MODEL)	

**** ACCESSORIES AND PACKING MATERIALS (KIT) ****

Part No.	Description
*2-180-621-11	CASE, RECEIVE (NP-66H)
3-712-673-01	DRIVER (E MODEL)
*3-741-532-02	CUSHION, ACC
3-741-582-01	BELT, SHOULDER
** AC-V35	AC POWER ADAPTOR
*** NP-66H	BATTERY PACK

Note

** MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.
*** MARK PARTS IS AVAILABLE AS AN OPTIONAL ACCESSORY.

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HARDWARE LIST
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SCREW

Part No.	Description
7-621-255-15	SCREW +P 2X3
7-621-281-15	SCREW +P 2X2
7-621-255-25	SCREW +BVTT 2X4 (S)
7-627-553-47	PRECISION SCREW +P 2X4
7-627-555-88	PRECISION SCREW +P 1.4X1.8
7-627-853-17	PRECISION SCREW +P 2X2.2 TYPE3
7-627-553-37	PRECISION SCREW +P 2X3 TYPE 3
7-627-553-68	PRECISION SCREW +P 2X6 TYPE 3

STEEL BALL

Part No.	Description
7-671-155-01	STEEL BALL 3.0

****

When indicating parts by reference number, please include the board name.

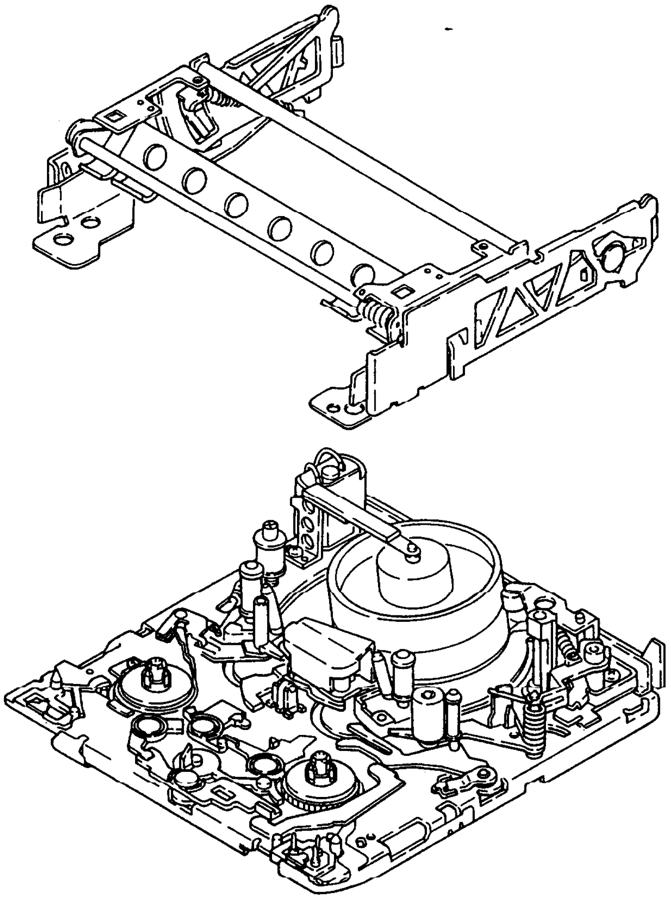
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

mm Video MECHANICAL ADJUSTMENT MANUAL III

U MECHANISM

Video 8

Please use in conjunction with the SERVICE MANUAL.



8 MECHANISM DECK

SONY®

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1. PREPARATIONS FOR MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

Note: For removal of the cabinet, the boards, the cassette compartment, etc., refer to the service guides.

1-1. OPERATION WITHOUT CASSETTE COMPARTMENT ASSEMBLY AND TAPE

Note: The unit will not work if exposed to a strong light.

1-1-1. How to Trigger the Loading Operation (See Fig. 1-1.)

1) Supply power to the unit after removing the cabinet, the camera block, the cassette compartment assembly, etc., as indicated in the service guides. (This will enable operation of the mechanical deck.)
2) Cover the LED assembly with an opaque cap, etc. ❶.
3) Attach a piece of tape to the RECOG switch ❷ so that the pin is held down.
4) Push the EJECT lever ❸ in the direction of the arrow Ⓐ.

1-1-2. Setting the Playback Mode (See Fig. 1-1.)

1) Follow the procedures in section 1-1-1. above.
2) Put the rubber band ❹ around the S and T reels.
3) Press the PLAY switch of unit, then push the tension regulator arm assembly ❺ in the direction of the arrow Ⓑ when the T reel starts to rotate (the tension regulator band will be released, and the S reel will start rotating).
4) To stop operation, press the STOP switch.

1-1-3. Eject Operation (See Fig. 1-1.)

1) To eject, turn the EJECT switch on.

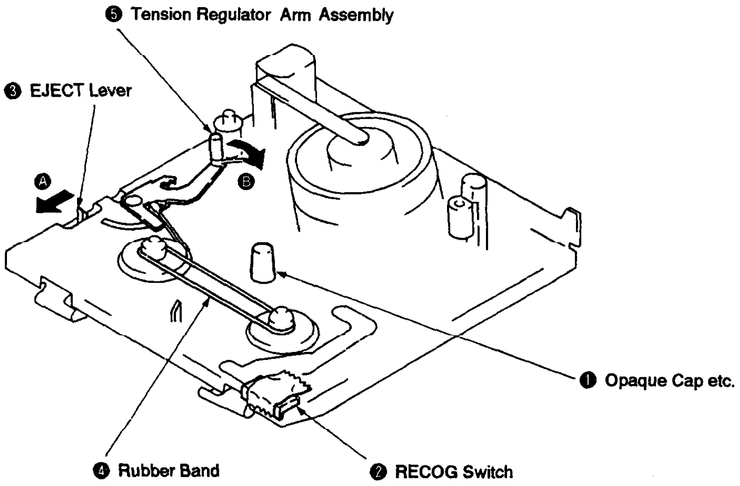


Fig. 1-1.

1-2. THE MODE SELECTOR

1-2-1. Name of Each Part (external) (See Fig. 1-2.)

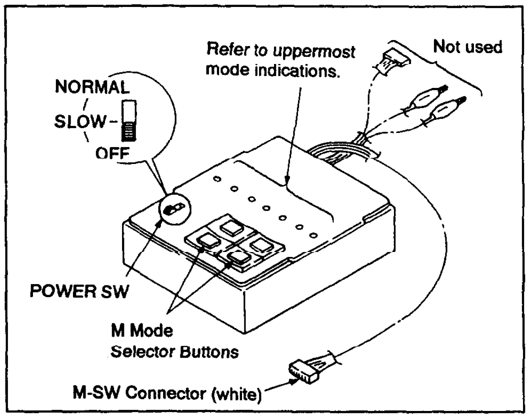

Refer to uppermost mode indications.
Not used
NORMAL
SLOW
OFF
POWER SW
M Mode Selector Buttons
M-SW Connector (white)

Fig. 1-2.

1-2-2. Connections (See Fig. 1-3.)

1) Mount the MODE SELECTOR III panel (Ref. No. J-9) ❶ onto the mode selector.
2) Attach the conversion connector (Ref. No. J-8) ❸ of MODE SELECTOR III to the 6-pin connector (white) ❷ of the mode selector M-SW.
3) Remove the FP-89 flexible board ❺ from the flexible connector ❹.
4) Attach the FP-89 flexible board ❺ to the flexible connector ❻ of the MODE SELECTOR III conversion connector ❸, then attach the 2-pin connector (white) ❽ of the loading motor to the 2-pin connector (white) ❼.

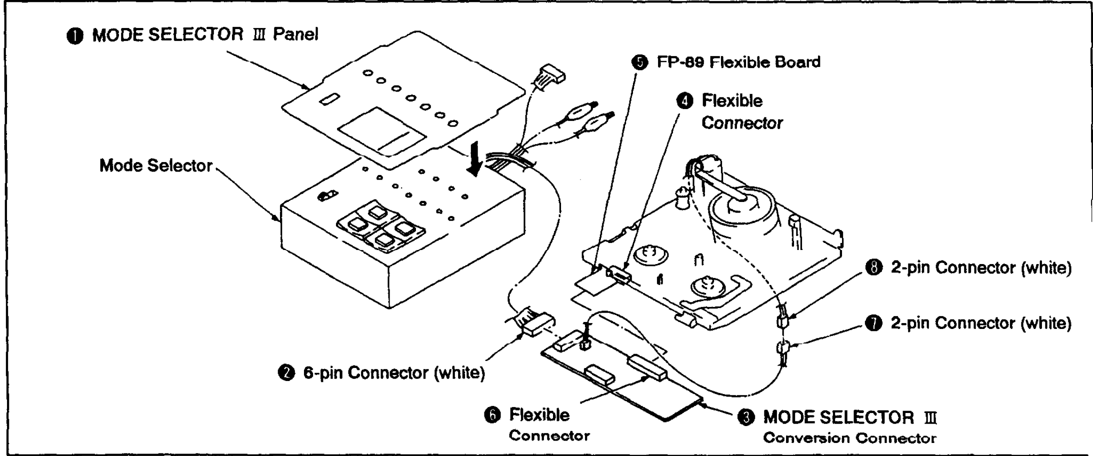

❶ MODE SELECTOR Ⅲ Panel
Mode Selector
❺ FP-89 Flexible Board
❹ Flexible Connector
❽ 2-pin Connector (white)
❼ 2-pin Connector (white)
❷ 6-pin Connector (white)
❻ Flexible Connector
❸ MODE SELECTOR Ⅲ Conversion Connector

Fig. 1-3.

1-2-3. Handling (See Figs. 1-2. and 1-4.)

- Use only the M mode selector buttons.
- Refer to mode indications on the uppermost part of the MODE SELECTOR III panel.
- If the right M mode selector button is kept pressed, the lit indication will change in the order of EJECT → (IA) → ULD → (IB) → STOP → (IC) → FWD.
- To change modes in the reverse direction (from FWD to EJECT), press the left selector button.

Note: For this U mechanism, the uppermost indicators on the MODE SELECTOR III panel are used. The IA, IB and IC indications light up during mode changes.

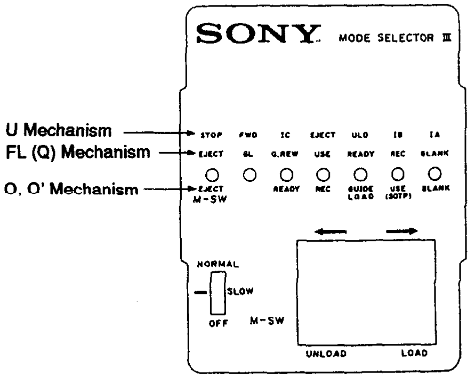

SONY MODE SELECTOR Ⅲ
U Mechanism
FL (Q) Mechanism
O, O' Mechanism
STOP
FWD
IC
EJECT
ULD
IB
IA
EJECT
GL
Q.REW
USE
READY
REC
BLANK
EJECT
M-SW
READY
REC
GUIDE LOAD
USE (SOTP)
BLANK
NORMAL
SLOW
OFF
M-SW
UNLOAD
LOAD

Fig. 1-4.

2. PERIODICAL CHECK AND MAINTENANCE (See Fig. 2-1.)

The following periodical check and maintenance procedures are necessary to ensure proper operation and to protect the tapes as well as the unit, and the following maintenance procedures must be always carried out after repairing regardless of how long the unit has been used.

2-1. ROTARY DRUM ASSEMBLY CLEANING

1) While pressing a piece of chamois leather (Ref. No. J-2) moistened in cleaning fluid (Ref. No. J-1) lightly against the rotary drum, turn the rotary upper drum slowly counter-clockwise with your fingers.

Note: Do not drive the drum with the motor, and do not turn it clockwise.
Do not move the chamois leather vertically against the head tip; this can damage the head tip. Strictly follow the cleaning instructions above.

2-2. TAPE PATH CLEANING

1) Set the cassette compartment assembly to the eject state, or remove it. Then clean the tape path (guides No. 1 to 7, capstan shaft, pinch rollers) with a piece of chamois leather moistened in cleaning fluid (See Fig. 2-1).

2-3. DRIVE SYSTEM CLEANING

1) Clean the drive system (timing belt, reel table surface) with a piece of cloth moistened in cleaning fluid.

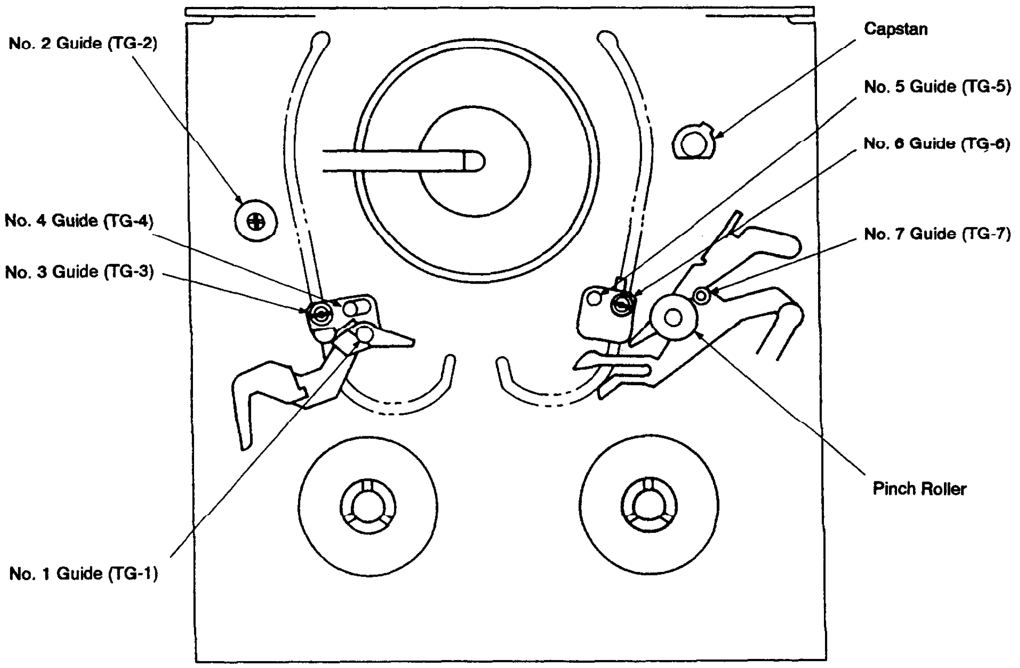


Fig. 2-1.

2-4. PERIODICAL CHECK ITEMS

○Cleaning ◎Lubrication ☆Check

Maintenance and Check Item		Operation time (H)										Remarks
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Cleaning and Demagnetizing	Tape path surfaces Cleaning	○	○	○	○	○	○	○	○	○	○	Do not oil.
	Rotary drum assembly cleaning and demagnetizing	○	○	○	○	○	○	○	○	○	○	Do not oil.
Drive System	Relay belt (short)	–	☆	–	☆	–	☆	–	☆	–	☆	3-728-866-01
	Relay belt (long)	–	☆	–	☆	–	☆	–	☆	–	☆	3-728-865-01
	Capstan shaft	–	◎	–	◎	–	◎	–	◎	–	◎	Take care that no oil gets on tape path surfaces.
	Idler pulley axle	–	◎	–	◎	–	◎	–	◎	–	◎	
	Loading motor	–	☆	–	☆	–	☆	–	☆	–	☆	1-541-612-11
Performance Check	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	–	☆	–	☆	–	☆	–	☆	–	☆	
	Brake system	–	☆	–	☆	–	☆	–	☆	–	☆	
	FWD, RVS torque measurement	–	☆	–	☆	–	☆	–	☆	–	☆	

Notes: When overhauling the unit, perform parts replacement referring to the table above.

Regarding Oil:

- Always use the specified oil (using oil of different viscosity, etc. can cause troubles of several kinds).
  Specified oil: Part No. 7-661-018-01
  (Mitsubishi Diamond Oil Hydrofluid EP56)
- Be sure that no dirt is mixed in the oil to be used on axle bearings. Use of dirty oil can result in bearing wear and burning.
- By "one drop of oil" is meant the quantity of oil adhering to the end of a a 2mm-diameter rod as shown in Fig. 2-2.

On grease:

- Use the specified grease.
  Grease: Part No. 7-662-010-08
  (Sony grease SGL-701)

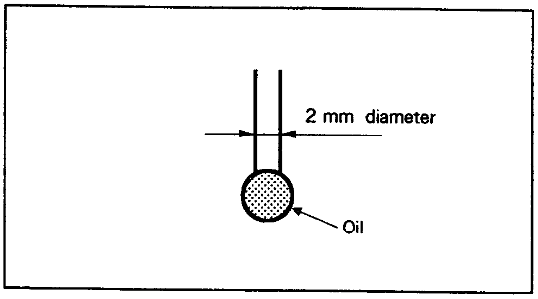


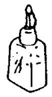
Fig. 2-2.

2-5. SERVICING TOOLS

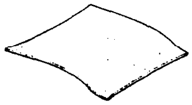
Ref. No.	Name	Part Code	Marking	Application, etc.
J-1	Cleaning fluid	Y-2031-001-0	–	
J-2	Chamois cloth	2-034-697-00	–	
J-3	Head demagnetizer	Commercially available	–	
J-4	Dental mirror Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-5	Alignment tape NTSC (WR5-1N) PAL (WR5-1C)	8-967-995-01 8-967-995-06		Tape path
J-6	FWD/RVS takeup torque cassette	J-6080-624-A	GD-2086	
J-7	Rotary drum jig	(Attached to the maintenance rotary upper drum)		
J-8	Mode selector III conversion connector	J-6082-021-A		General
J-9	Mode selector III panel	J-6082-023-A		General
J-10	Mode selector	J-6080-825-A		General
J-11	Hexagonal wrench detection (0.89 mm) or L wrench (0.89 mm)	7-700-766-01 7-700-736-06		Tape path
J-12	Sony grease (SGL-701)	7-662-010-08		

Other devices: Oscilloscope
Analog tester (20 kΩ)

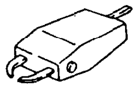
J-1



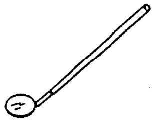
J-2



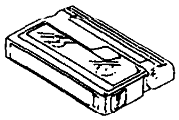
J-3



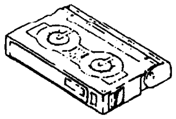
J-4



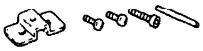
J-5



J-6

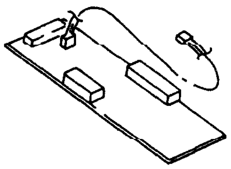


J-7

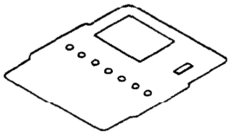


(Attached to the maintenance rotary upper drum)

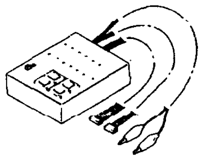
J-8



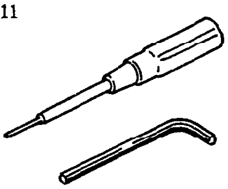
J-9



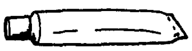
J-10



J-11



J-12



3. MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

Notes:
- Use the mode selector (Ref. No. J-10) for procedures in this chapter.
- Modes within a frame ☐ are those set by pressing the buttons of the mode selector.

3-1. HC ROLLER ASSEMBLY

1. Removal (See Fig. 3-1.)

1) Remove the screw ❶, then remove the HC roller assembly ❷.

2. Installation (See Fig. 3-1.)

1) Align the two dowels ❸ attached to the HC roller assembly ❷ with the two holes ❹ in the mechanism chassis.
2) Secure the HC roller assembly ❷ with the screw ❶.

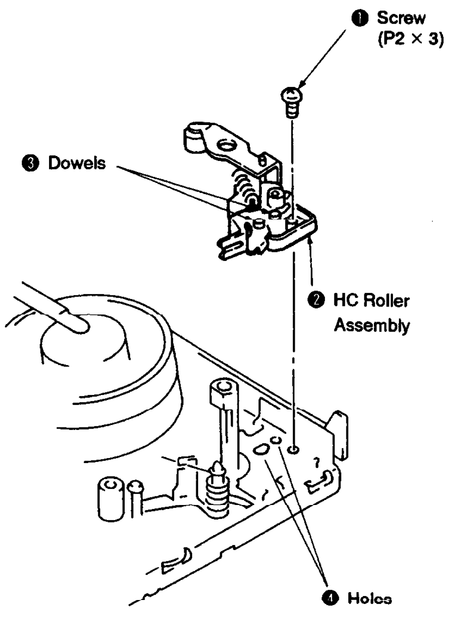

❶ Screw (P2 × 3)
❸ Dowels
❷ HC Roller Assembly
❹ Holes

Fig. 3-1.

3-2. GUIDE GUARD ASSEMBLY

1. Removal (See Fig. 3-2.)

Remove the screw ❶, then remove the guide guard assembly ❷.

2. Installation (See Fig. 3-2.)

1) Align the dowel ❸ attached to the guide guard assembly ❷ with the hole ❹.
2) Secure the guide guard assembly ❷ with the screw ❶.

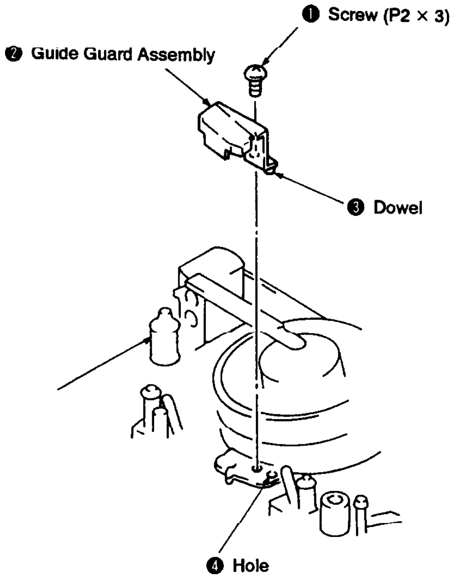

❶ Screw (P2 × 3)
❷ Guide Guard Assembly
❸ Dowel
❹ Hole

Fig. 3-2.

3-3. DC MOTOR (CAPSTAN MOTOR) ASSEMBLY

1. Removal (See Fig. 3-3.)

1) Set the ULD mode.
2) Turn the stopper ❶ in the direction of the arrow Ⓐ as far as it will go.
3) Remove the two screws ❷, then remove the DC motor ❸.

2. Installation (See Fig. 3-3.)

1) Align the two screwed dowels ❹ with the two holes ❺, then engage the toothed part ❻ with the connecting gear ❼.
2) Secure the DC motor assembly ❸ with the two screws ❷.
3) Turn the stopper ❶ in the direction of the arrow Ⓑ as far as it will go.

Note:
- When engaging the gears, take care not to damage their teeth.
- Do not leave any clearance between the DC motor ❸ and the chassis.
- Do not touch the capstan motor axle*, the oil seal* and the rotor*.

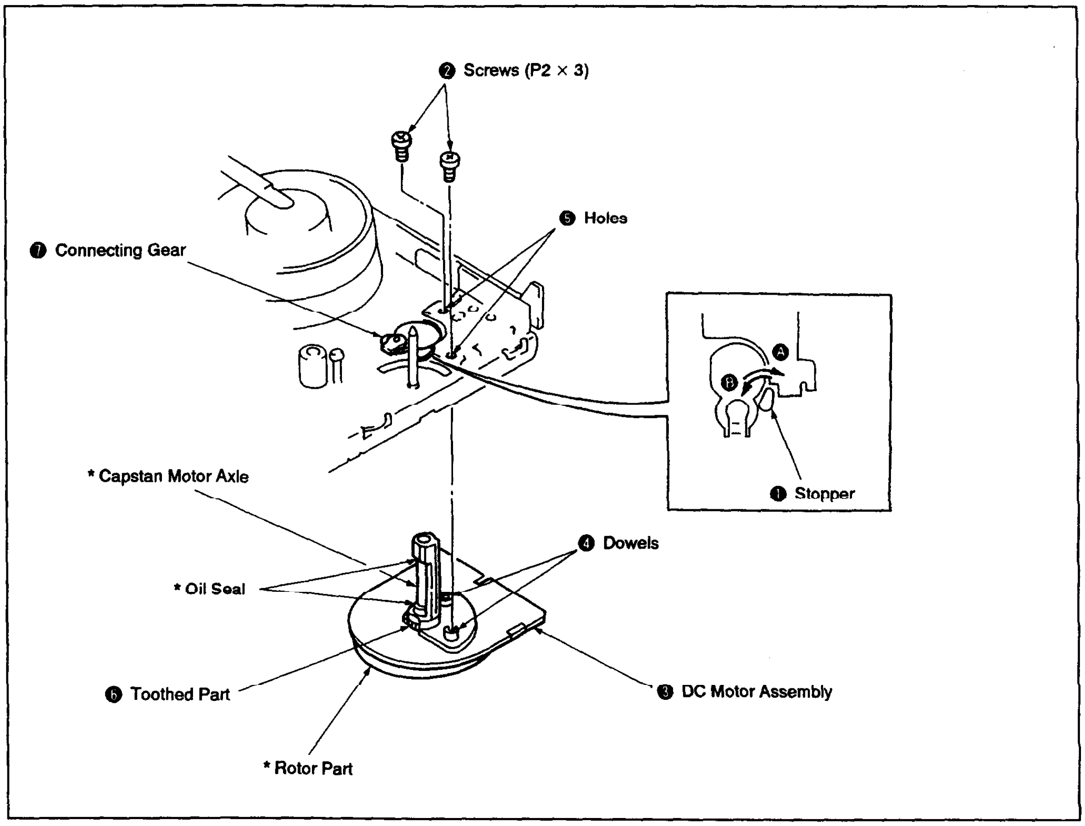

❷ Screws (P2 × 3)
❺ Holes
❼ Connecting Gear
Ⓐ
Ⓑ
❶ Stopper
* Capstan Motor Axle
❹ Dowels
* Oil Seal
❻ Toothed Part
❸ DC Motor Assembly
* Rotor Part

Fig. 3-3.

3-4. S BRAKE, T BRAKE

1. Removal (See Fig. 3-4.)

1) Remove the torsion coil spring (ST) ❶.
2) Remove the axle holding pin ❷, then remove the T brake ❸.
3) Remove the axle holding pin ❹, then remove the S brake ❺.

2. Installation (See Fig. 3-4.)

1) While fitting the toothed part ❻ into the notch ❼, mount the S brake ❺.
2) Insert the axle holding pin ❹.
3) Insert the axle ❽ to the S reel side of the brake release arm ❾ so that the Ⓐ part comes closer to the drum than part Ⓑ, and mount the T brake ❸.
4) Insert the axle holding pin ❷.
5) Insert the torsion coil spring (ST) ❶ below the claw ⓫ of the axle ❿, then hook it to two claws ⓬.

Note: Confirm that the claws of axle holding pins ❷ and ❹ are not broken before assembling.

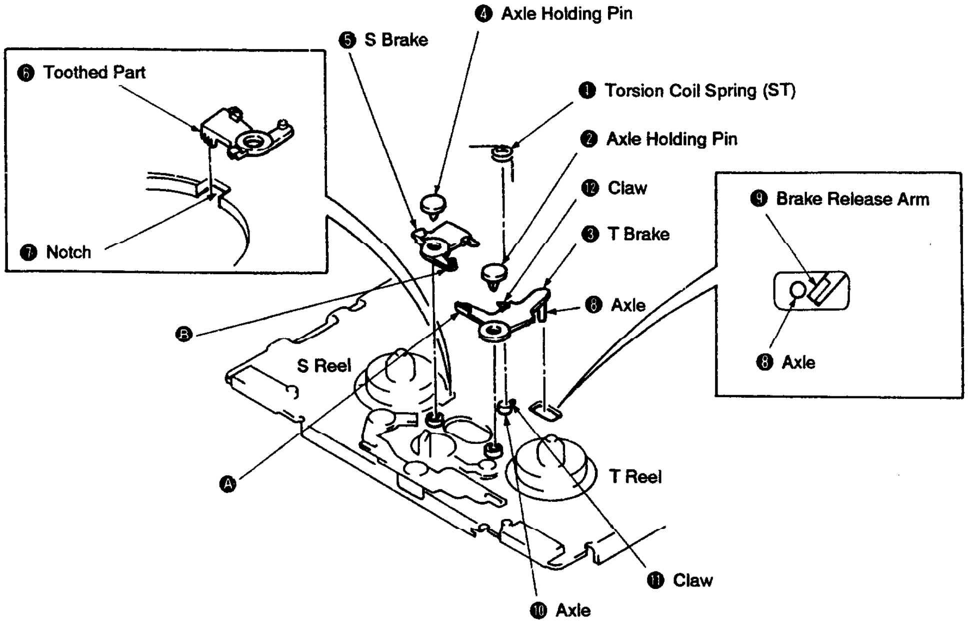

❹ Axle Holding Pin
❺ S Brake
❻ Toothed Part
❼ Notch
❶ Torsion Coil Spring (ST)
❷ Axle Holding Pin
⓬ Claw
❸ T Brake
❾ Brake Release Arm
❽ Axle
❽ Axle
Ⓑ
S Reel
Ⓐ
T Reel
⓫ Claw
❿ Axle

Fig. 3-4.

3-5. LB BRAKE, AXLE HOLDING PINS

1. Removal (See Fig. 3-5.)

1) Remove the screw ❶, then remove the TL holding plate ❷.
2) Remove the axle holding pin ❸, then remove the LB brake ❹.
3) Remove the axle holding pin ❺, then remove the LB lever ❻.

2. Installation (See Fig. 3-5.)

1) Mount the LB lever ❻ matching it to pin ❼ of the LB gear, then secure it with the axle holding pin ❺.
2) Insert the pin ❽ into the notch ❾ of the LB lever ❻, then mount the LB brake ❹ while inserting the toothed part ❿ into the notch ⓫.
3) Insert the axle holding pin ❸.
4) Align the dowel ⓬ with the hole ⓭, then mount the TL holding plate and secure it with the screw ❶.

Note: Confirm that the claws of axle holding pins ❸ and ❺ are not broken before assembling.

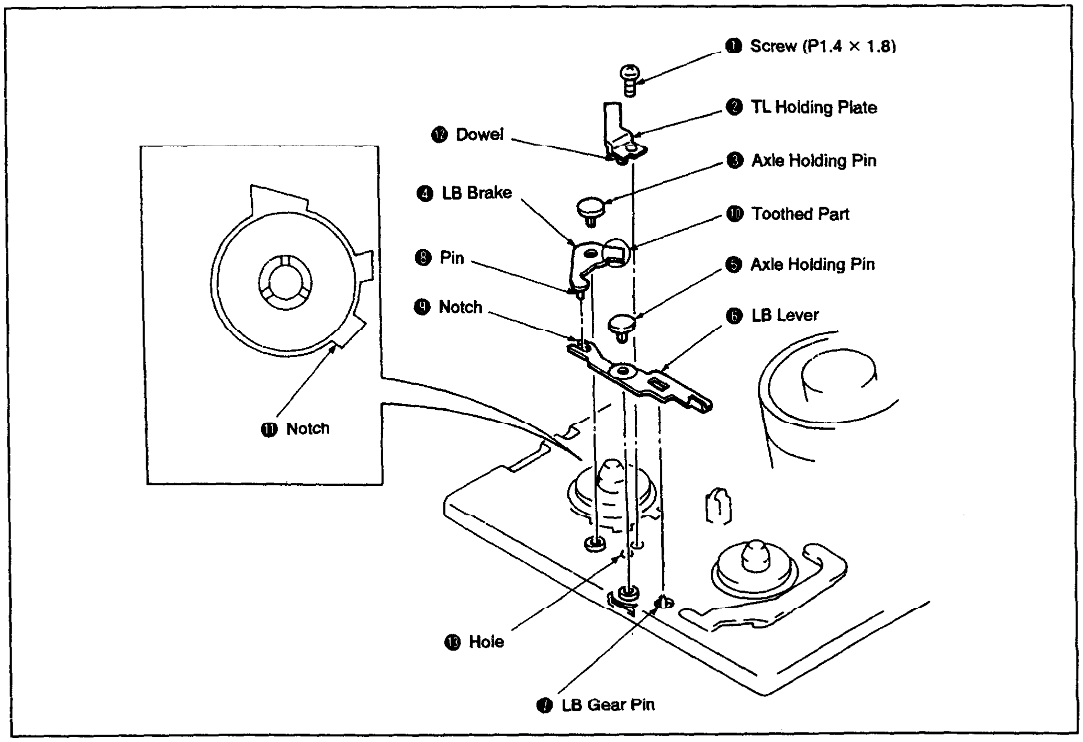

❶ Screw (P1.4 × 1.8)
❷ TL Holding Plate
⓬ Dowel
❸ Axle Holding Pin
❹ LB Brake
❿ Toothed Part
❽ Pin
❺ Axle Holding Pin
❾ Notch
❻ LB Lever
⓫ Notch
⓭ Hole
❼ LB Gear Pin

Fig. 3-5.

3-6. LB RELEASE ARM

1. Removal (See Fig. 3-6.)

1) While pushing the claw ❶ in the direction of the arrow, remove the LB release arm ❷.

2. Installation (See Fig. 3-6.)

1) Fit the LB release arm ❷ to the axle ❸, insert protrusions ⓐ, ⓑ, ⓒ, ⓓ into the three holes ❹, then secure with the claw ❶.

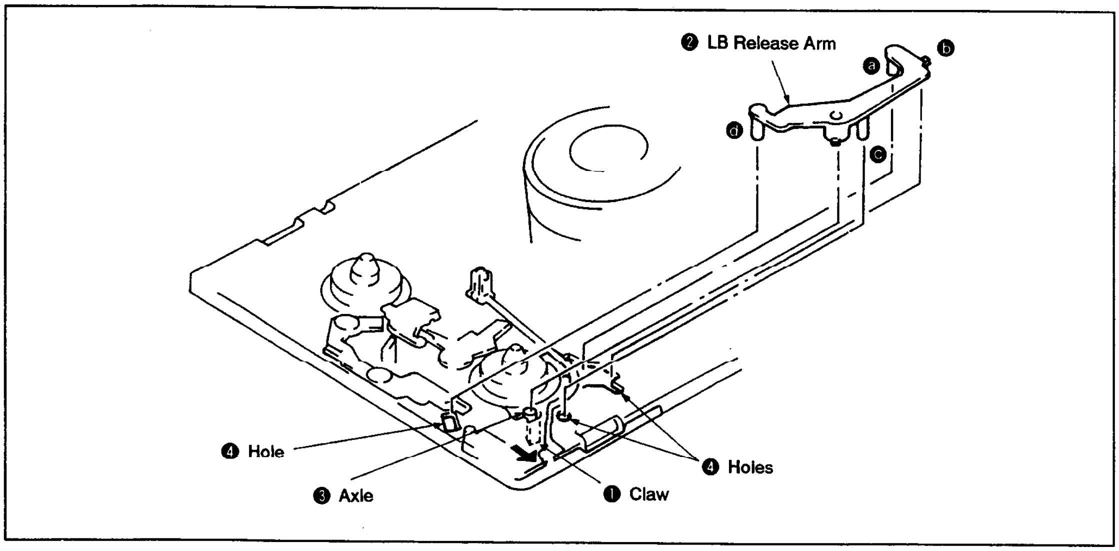

❷ LB Release Arm
ⓑ
ⓐ
ⓓ
ⓒ
❹ Hole
❸ Axle
❶ Claw
❹ Holes

Fig. 3-6.

3-7. RK STOPPER, RK STOPPER ARMS

1. Removal (See Fig, 3-7.)

1) Remove the torsion coil spring (RK) ❶.
2) Open the chassis claw ❷, then remove the RK stopper arm ❸.
3) Remove the RK stopper ❹.

2. Installation (See Fig. 3-7.)

1) Mount the RK stopper ❹ onto the axle ❺.
2) Mount the RK stopper arm ❸ onto the axle ❻, insert Pin ❿ into hole ⓫, then hook the claw ❷ of the chassis to the hole ❼.
3) Insert the torsion coil spring (RK) ❶ into the axle ❺, then hook it to claws ❽ and ❾.

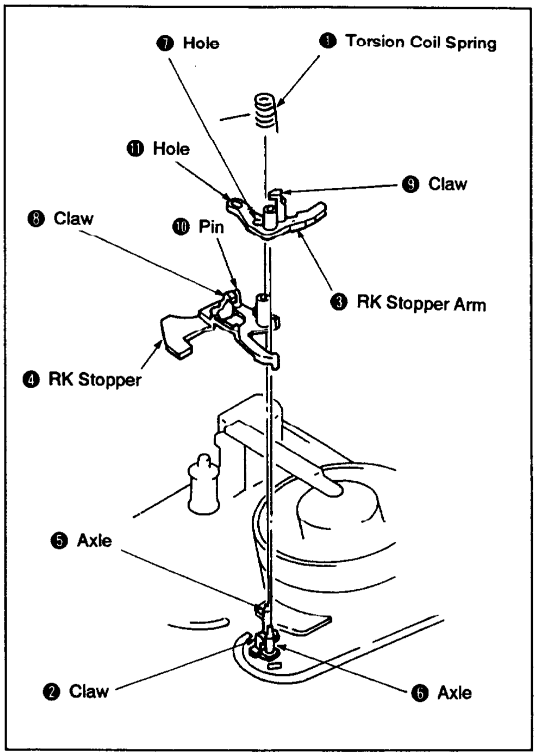

❼ Hole
❶ Torsion Coil Spring
⓫ Hole
❾ Claw
❽ Claw
❿ Pin
❸ RK Stopper Arm
❹ RK Stopper
❺ Axle
❷ Claw
❻ Axle

Fig. 3-7.

3-8. PINCH ARM ASSEMBLY, TG-7 ASSEMBLY

1. Removal (See Fig. 3-8.)

1) Set the $\boxed{\text{IB}}$ mode.
2) Remove the stopper washer ❶, then remove the pinch arm assembly ❷.
3) Bend the claw ❹ inside hole ❸ in the direction of the arrow using a thin screwdriver or the like, then remove the TG-7 plate spring ❺.
4) Remove the TG-7 arm assembly ❻.

2. Installation (See Fig. 3-8.)

1) Grease the inner surfaces of hole ❼ (See Fig. A).
2) Insert the axle ❽ of the TG-7 arm assembly ❻ into the hole ❼.
3) Grease the shaded section ⓐ (See Fig. A).
4) Insert the TG-7 plate spring ❺ into the hole ❸, then secure it with the claw ❹.
5) Apply half a drop of oil to the axle ❾ (See Fig. B).
6) Fit the pinch arm assembly ❷ to the axle ❾ and insert the pinch roller sub arm assembly tab ❿ into the ⓑ part.
7) Install the stopper washer ❶.

Note:
- Take care not to grease the screw ⓫ of the TG-7 arm assembly ❻ (See Fig. A).
- When fitting the pinch arm assembly ❷ to the axle ❾, make sure that it does not touch the TG-7 guide ⓬ or the rubber roller ⓭.
- After assembling, be sure to perform tape path adjustment as described in section 4.

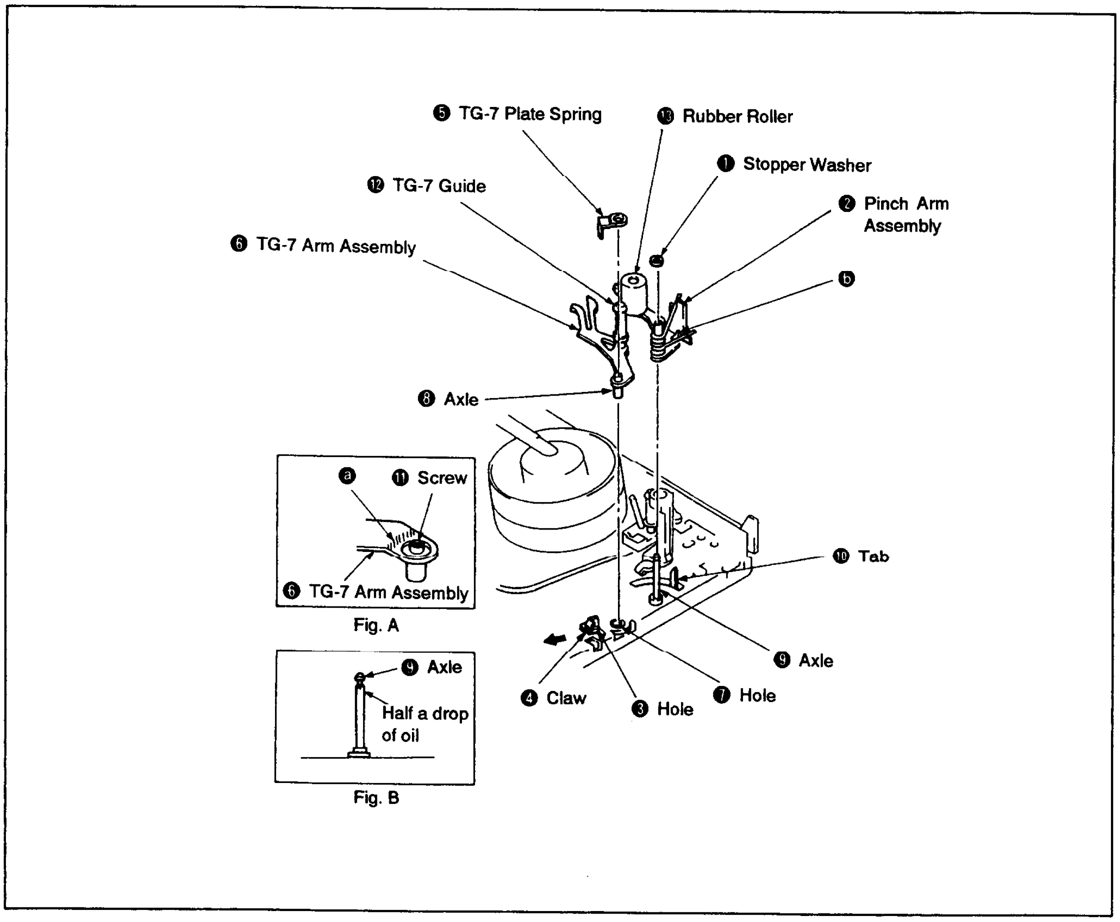

❺ TG-7 Plate Spring
⓭ Rubber Roller
❶ Stopper Washer
⓬ TG-7 Guide
❷ Pinch Arm Assembly
❻ TG-7 Arm Assembly
ⓑ
❽ Axle
ⓐ
⓫ Screw
❻ TG-7 Arm Assembly
Fig. A
❾ Axle
Half a drop of oil
Fig. B
❿ Tab
❾ Axle
❹ Claw
❸ Hole
❼ Hole

Fig. 3-8.

3-9. TG-2 ASSEMBLY

1. Removal (See Fig. 3-9.)

1) Remove the TG-2 upper flange assembly ❶.
2) Remove the TG-2 roller ❷, the TG-2 sleeve ❸, the TG-2 lower flange ❹ and the compression spring ❺.

2. Installation (See Fig. 3-9.)

1) Mount the compression spring ❺, the TG-2 lower flange ❹, the TG-2 sleeve ❸ and the TG-2 roller ❷ to the axle.
2) Secure the TG-2 upper flange ❶ to the axle by rotating it 4 to 6 turns.

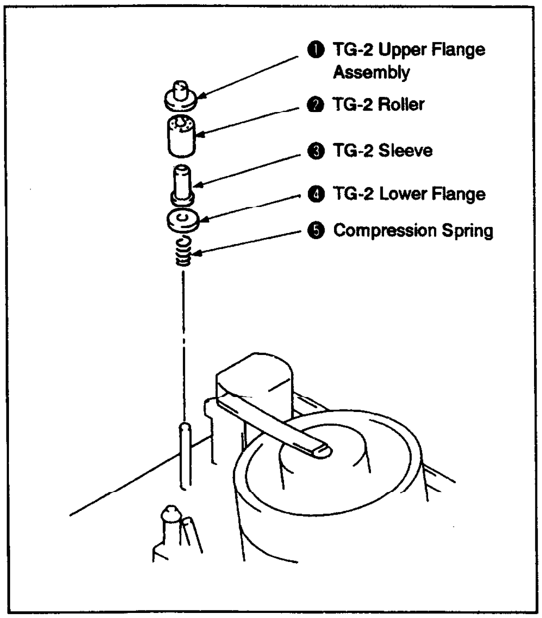

❶ TG-2 Upper Flange Assembly
❷ TG-2 Roller
❸ TG-2 Sleeve
❹ TG-2 Lower Flange
❺ Compression Spring

Fig. 3-9.

3. TG-2 Height Preset (see Fig. 3-10.)

1) Adjust height from the mechanism chassis upper surface to the TG-2 upper flange ❶ upper surface to 18.6 mm by turning the TG-2 upper flange ❶.

Note: After adjustment, be sure to perform tape path adjustment as described in section 4.

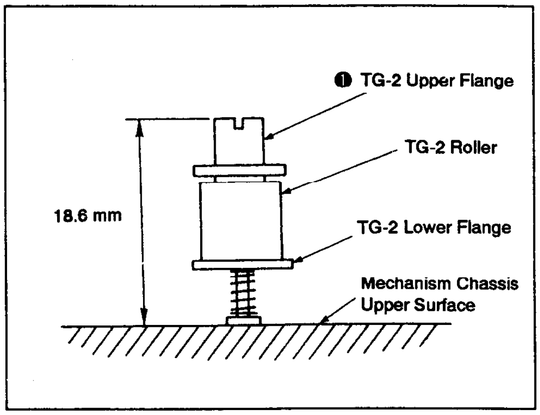

❶ TG-2 Upper Flange
TG-2 Roller
18.6 mm
TG-2 Lower Flange
Mechanism Chassis Upper Surface

Fig. 3-10.

3-10. S REEL TABLE ASSEMBLY, T REEL TABLE ASSEMBLY

1. Removal (See Fig. 3-11.)

1) Remove the S brake and T brake as described in section 3-4.
2) Remove the TL holding plate as described in section 3-5.
3) Remove the tension regulator band assembly as described in section 3-11.
4) Remove the S reel table assembly ❶.
5) Turn the stopper ❷ approx. 90 ° in the direction of the arrow Ⓐ.
6) While sliding the LB release arm ❸ in the direction of the arrow Ⓑ, remove the T reel table assembly ❹.

2. Installation (See Fig. 3-11.)

1) Apply half a drop of oil to the axle ❺ (See Fig. A).
2) Move the RK gear ❻ in the direction of the arrow Ⓒ and the TS brake ❼ in the direction of the arrow Ⓓ, putting them out of the way.
3) While sliding the LB release arm ❸ in the direction of the arrow Ⓑ, mount the T reel table assembly ❹ onto the axle ❺, then turn the stopper ❷ in the direction of the arrow Ⓔ as far as it will go.
4) Apply half a drop of oil to the axle ❽ (See Fig. B).
5) Move the RK gear ❻ in the direction of the arrow Ⓕ, the UL brake ❾ in the direction of the arrow Ⓖ and the LB brake ❿ in the direction of the arrow Ⓗ, putting them out of the way.
6) Mount the S reel table ❶ onto the axle ❽.
7) Mount the tension regulator band assembly as described in section 3-11.
8) Mount the TL holding plate as described in section 3-5.
9) Mount the S brake and T brake assemblies as described in section 3-4.

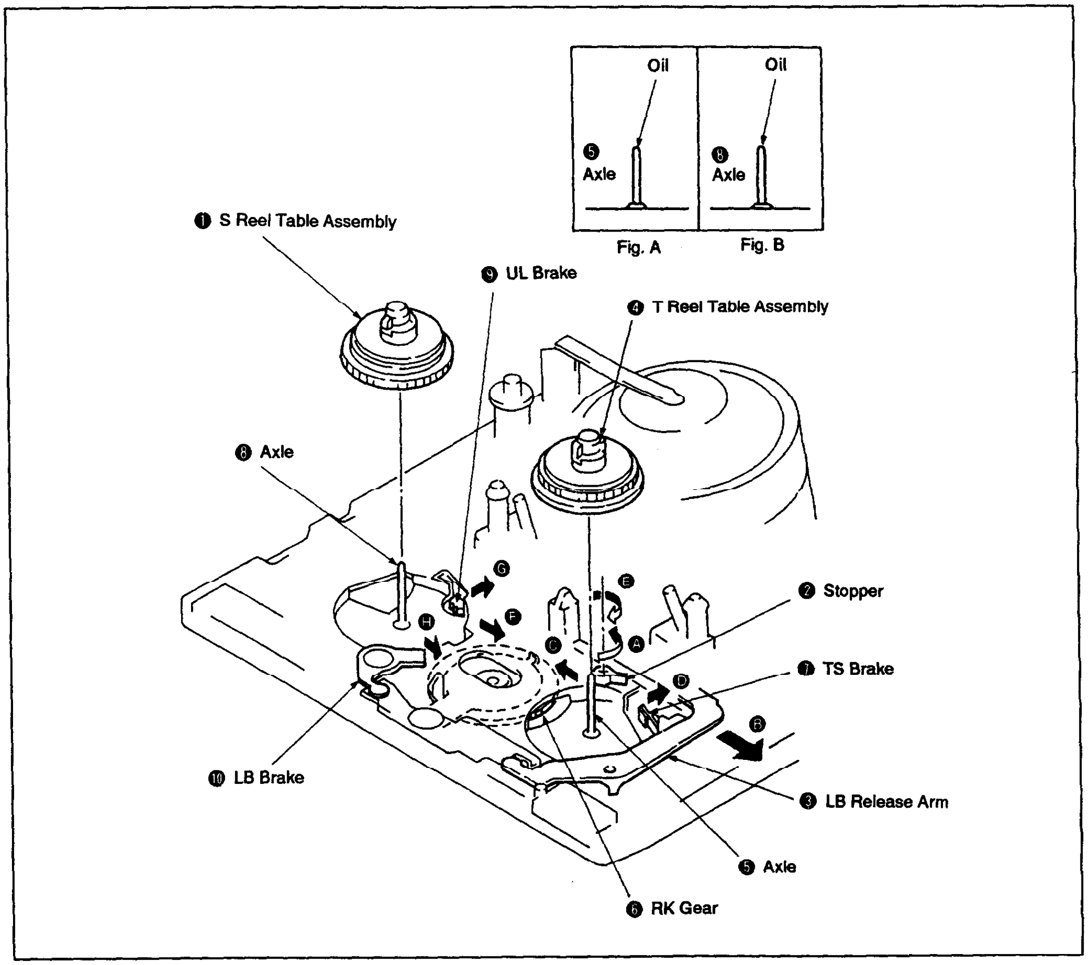

Oil
Oil
❺ Axle
❽ Axle
Fig. A
Fig. B
❶ S Reel Table Assembly
❾ UL Brake
❹ T Reel Table Assembly
❽ Axle
Ⓖ
Ⓔ
Ⓕ
Ⓗ
Ⓒ
Ⓐ
Ⓓ
❷ Stopper
❼ TS Brake
Ⓑ
❿ LB Brake
❸ LB Release Arm
❺ Axle
❻ RK Gear

Fig. 3-11.

3-11. TENSION REGULATOR BAND ASSEMBLY, TENSION REGULATOR ARM ASSEMBLY

1. Removal (See Fig. 3-12.)

1) Remove the TL holding plate as described in section 3-5.
2) Remove the screw ❶.
3) Using a thin screwdriver or the like, remove the tension regulator band assembly ❹ from the axle ❸ of tension regulator arm assembly ❷.
4) Remove the tension spring ❺.
5) Remove the stopper washer ❻ from the back of the mechanism chassis, then remove the tension regulator arm assembly ❷.
6) Open the claw ❼, then remove the adjust arm ❽.

Note: When removing the tension regulator band assembly ❹, take care not to twist or bend it, and not to touch the felt surface ❾.

2. Installation (See Fig. 3-12.)

1) Engage the adjust arm ❽ in the position shown in Fig. A, then close the claw ❼.
2) Apply half a drop of oil to the hole ❿.
3) Mount the tension regulator arm assembly ❷, then insert it into the slot ⓫ so that the ⓐ part comes to the arrow Ⓐ side of the switch lever assembly (See Fig. B).
4) While holding the tension regulator arm assembly ❷ from the mechanism chassis front, secure it with the stopper washer ❻ from the back.
5) Hook the R hook of the tension spring ❻ to the adjust arm ❽ as shown in the figure, then hook the opposite end to the tension regulator arm assembly ❷.
6) Mount the tension regulator band assembly ❹ onto the axle ❸ of tension regulator arm assembly ❷, and place it so that the felt surface ❾ comes against the shaded portion of the S reel table assembly ⓬.
7) Mount the tension regulator plate ⓭ of the tension regulator band assembly ❹ so that it is aligned with the dowel ⓮ of the mechanism chassis, then secure it temporarily with the screw ❶.
8) Mount the TL holding plate as described in section 3-5.
9) Adjust tension regulator FWD position as described in section 3-12.
10) Perform adjust arm adjustment as described in section 3-22.

Note: When mounting the tension regulator band assembly ❷, take care not to twist or bend it, and not to touch the felt surface ❾.

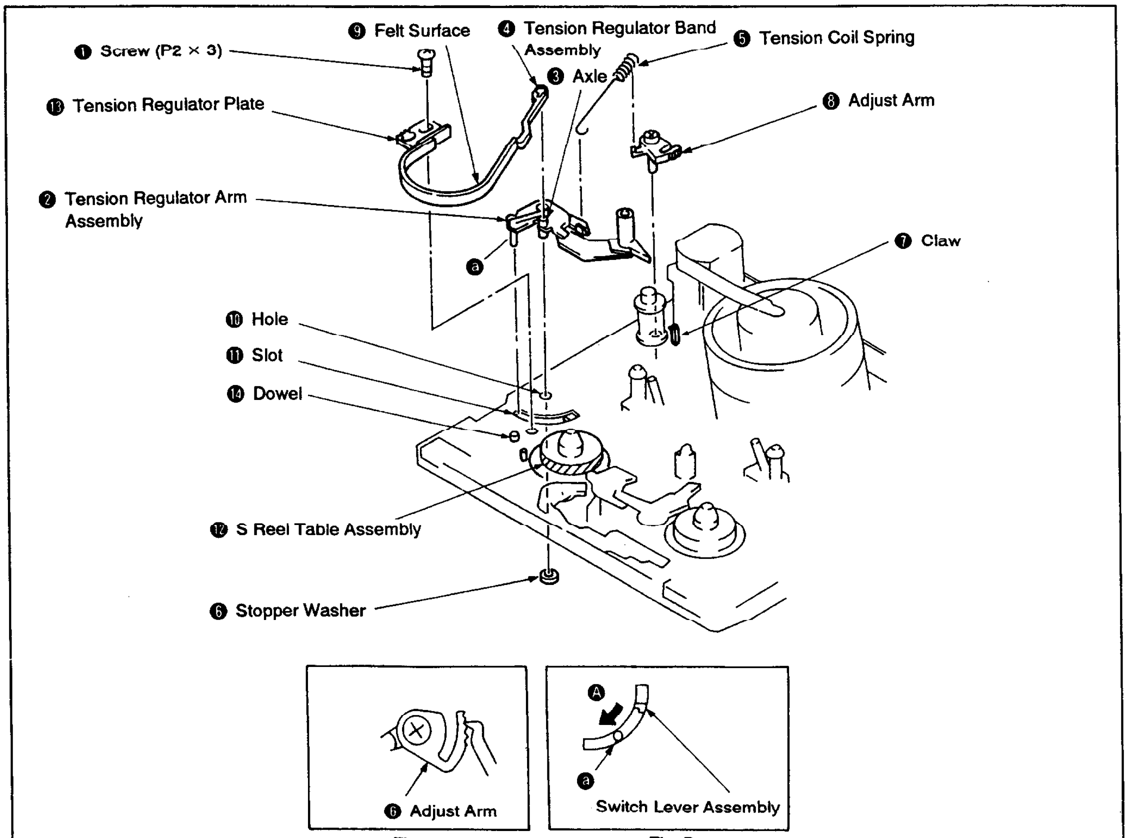

❶ Screw (P2 × 3)
❾ Felt Surface
❹ Tension Regulator Band Assembly
❺ Tension Coil Spring
❸ Axle
⓭ Tension Regulator Plate
❽ Adjust Arm
❷ Tension Regulator Arm Assembly
❼ Claw
ⓐ
❿ Hole
⓫ Slot
⓮ Dowel
⓬ S Reel Table Assembly
❻ Stopper Washer
❻ Adjust Arm
Ⓐ
ⓐ
Switch Lever Assembly

Fig. A

Fig. B

Fig. 3-12.

3-12. TENSION REGULATOR FWD POSITION PRESET (See Fig. 3-13.)

1) Load a cassette tape and set the FWD mode.
2) Confirm whether the distance between ⓐ part of the tension regulator arm ❶ and the groove ❷ of the chassis is 1.1 ± 0.3 mm. If this distance is not within the specified range, remove the cassette tape and perform the following adjustment.
3) Loosen the fixing screw ❹ of the tension regulator band assembly ❸.
4) Slide the tension regulator plate ❺ in the direction of the arrow Ⓐ if the measured distance is over the specified range, and in the direction of the arrow Ⓑ if it is under that range. Then, fix it with the screw ❹.
5) Repeat steps 1) and 2) and confirm that the distance is within the specified range.

Note: Use a cassette with the tape advanced halfway.

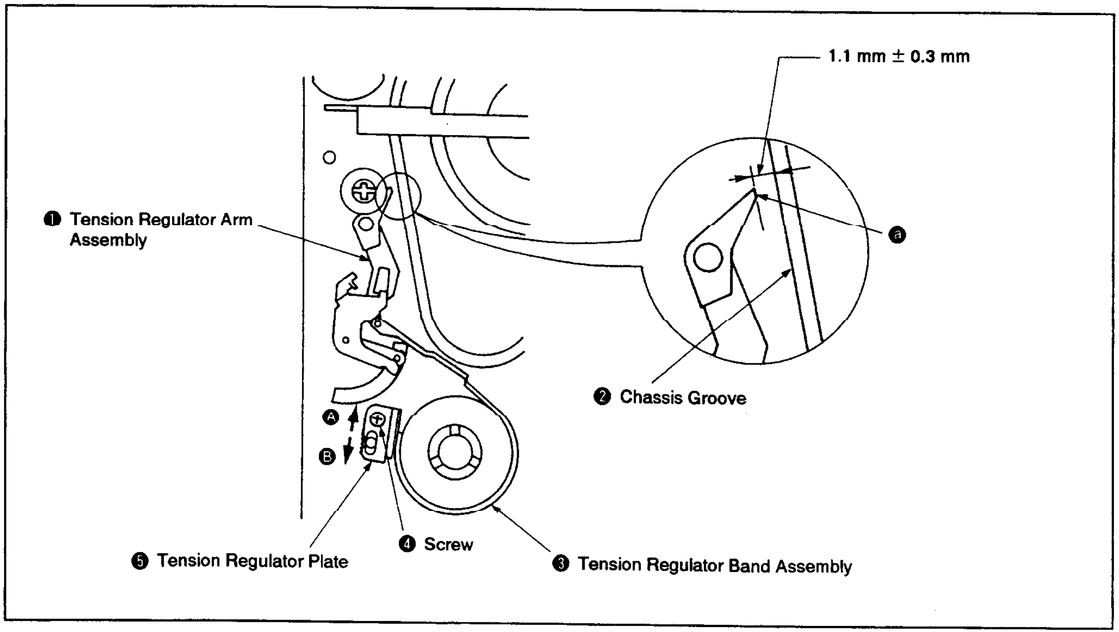

1.1 mm ± 0.3 mm
❶ Tension Regulator Arm Assembly
ⓐ
❷ Chassis Groove
Ⓐ
Ⓑ
❹ Screw
❺ Tension Regulator Plate
❸ Tension Regulator Band Assembly

Fig. 3-13.

3-13. DRUM ASSEMBLY, DEW SENSOR

1. Removal (See Fig. 3-14.)

1) Set the [EJECT] mode.
2) Remove the flexible board ❶ and the two connectors ❷.
3) Remove the guide guard assembly as described in section 3-2.
4) Remove the screw ❸ , then remove the axle ground terminal ❹.
5) Remove the three screws ❺ , then remove the drum assembly ❻ from the mechanism chassis.
6) Remove the connector ❿
7) Remove the screw ❼, then remove the dew sensor ❽.

Note:
- When removing the drum assembly ❻ from the mechanism chassis, take care not to cut the flexible board ❶ or the harness.
- Take care not to touch the head tip ❾.

2. Installation (See Fig. 3-14.)

1) Insert part 🅐 of the dew sensor ❽ into the notch ⓫ of the mechanism chassis, then secure it with the screw ❼.
2) Mount the connector ❿.
3) Clamp the harness ⓯ of the dew sensor ❽ with the reinforcing the claw ⓰ of the plate SS assembly (See Fig. A).
4) Insert the connector ❷ and the flexible board ❶ into the hole ⓬ of the mechanism chassis, align the drum assembly ❻ with the two dowels ⓭ and secure it with the three screws ❺.
5) Align the axle ground terminal ❷ with the two dowels ⓮ of the mechanism chassis and secure it with the screw ❸.
6) Mount the guide guard assembly as described in section 3-2.
7) Mount the two connectors ❷ and the flexible board ❶.

Note:
- Take care not to cut the flexible board ❶ or the harness ⓯.
- Take care not to touch the head tip ❾.
- After assembling, be sure to perform Tape Path Adjustment following instructions in section 4.

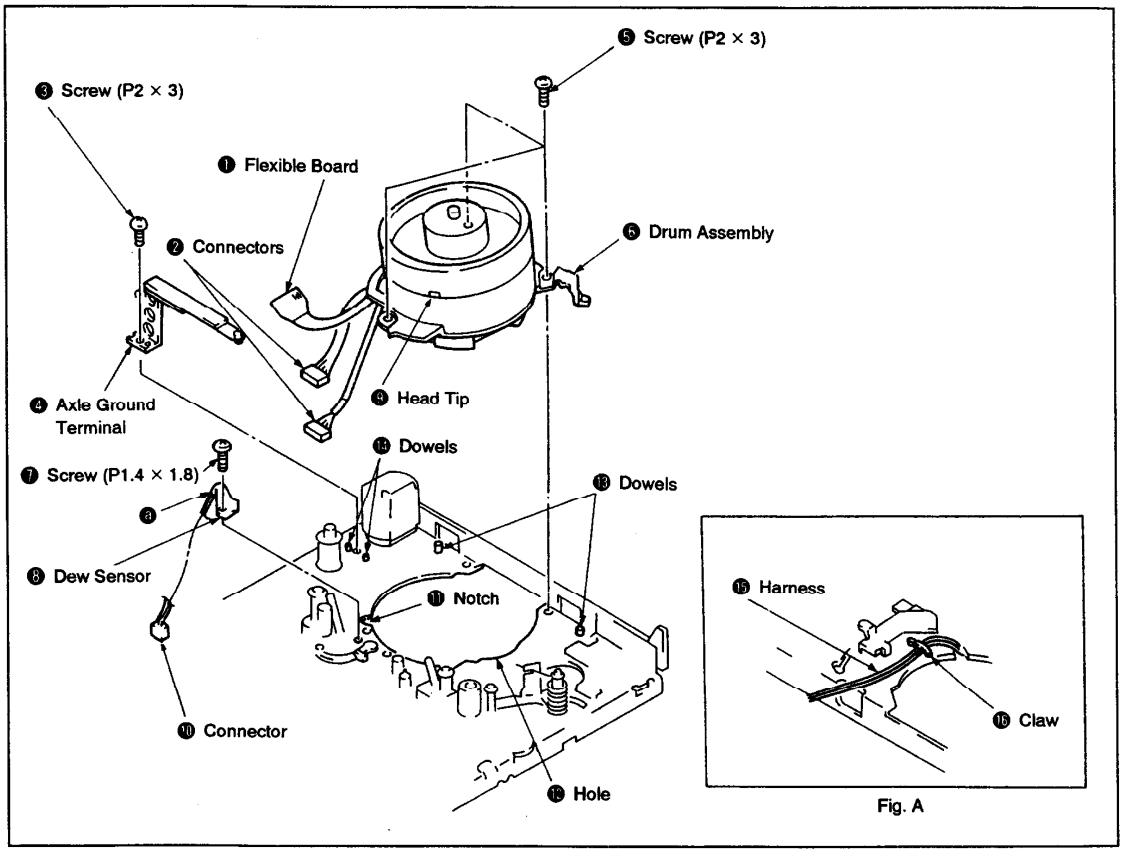

❺ Screw (P2 × 3)
❸ Screw (P2 × 3)
❶ Flexible Board
❻ Drum Assembly
❷ Connectors
❹ Axle Ground Terminal
❾ Head Tip
⓮ Dowels
❼ Screw (P1.4 × 1.8)
⓭ Dowels
🅐
❽ Dew Sensor
⓫ Notch
⓯ Harness
⓰ Claw
❿ Connector
⓬ Hole
Fig. A

Fig. 3-14.

3-14. EJECT LEVER, SWITCH LEVER ASSEMBLY, PINCH ROLLER SUB ARM ASSEMBLY

1. Removal (See Fig. 3-15.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Set the STOP mode.
3) Remove the claw ❶, then remove the eject lever ❷.
4) Remove the stopper washer ❸, then remove the switch lever assembly ❹.
5) Remove the pinch roller load spring ❺.
6) Remove the stopper washer ❻, then remove the pinch roller sub arm assembly ❼.

2. Installation (See Fig. 3-15.)

1) Grease the axle ❽ (See Fig. A).
2) Assemble by inserting ⓐ part of the pinch roller sub arm assembly ❼ into the slot ❾, then insert the pin ❿ into the loading lever assembly notch ⓫.
3) Secure with the stopper washer ❻.
4) Mount the pinch roller load spring ❺ by catching its ⓑ end between the claw ⓬ and the chassis side and its ⓒ end to the claw ⓬.
5) Apply half a drop of oil to the axle ⓭ (See Fig. B).
6) Align the groove ⓮ of the switch lever assembly ❹ with the mode detector switch protrusion ⓯, mount it on the axle ⓭, then insert the pin ⓰ into the drive gear (left) assembly ⓱ outer groove.
7) Secure with the stopper washer ❸.
8) Mount the eject lever ❷ and close the claw ❶.
9) Mount the DC motor (capstan motor) as described in section 3-3.

Note: When mounting the switch lever assembly ❹ onto the axle ⓭ with the tension regulator arm assembly installed, set the pin ⓰ to the arrow 🅐 side of the switch lever assembly ❹.

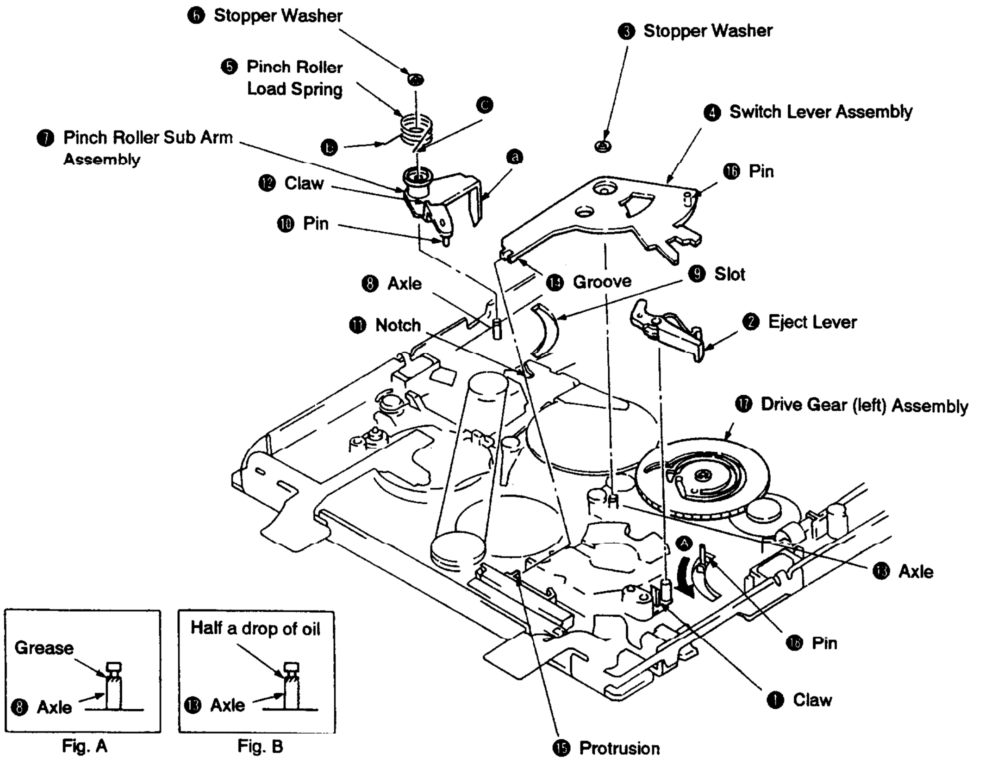

❻ Stopper Washer
❺ Pinch Roller Load Spring
❼ Pinch Roller Sub Arm Assembly
ⓑ
ⓒ
ⓐ
⓬ Claw
❿ Pin
❽ Axle
⓫ Notch
❸ Stopper Washer
❹ Switch Lever Assembly
⓰ Pin
⓮ Groove
❾ Slot
❷ Eject Lever
⓱ Drive Gear (left) Assembly
🅐
⓭ Axle
⓰ Pin
❶ Claw
⓯ Protrusion
Grease
❽ Axle
Half a drop of oil
⓭ Axle

Fig. A

Fig. B

Fig. 3-15.

3-15. TIMING BELT (L) , RC GEAR ASSEMBLY, LOADING LEVER ASSEMBLY, TIMING BELT (S), CONNECTING GEAR ASSEMBLY

1. Removal (See Fig. 3-16.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the pinch roller sub arm assembly as described in section 3-14.
3) Set the STOP mode.
4) Remove the stopper washer ❶ , then remove the RC gear assembly ❷ from the axle ❹ with the timing belt (L) ❸ attached.
5) Remove the timing belt (L) ❸ from the idler pulley assembly ❺.
6) Remove the stopper washer ❻ and remove the loading lever assembly ❽ while pushing the claw ❼ in the direction of the arrow 🅐.
7) Turn the stopper ❾ approx. 90 ° in the direction of the arrow 🅑.
8) Remove the connecting gear assembly ⓫ from the axle ⓰ with the timing belt (S) ❿ attached.
9) Remove the timing belt (S) ❿ from the idler pulley assembly ❺.

Note: When removing the connecting gear ⓫ , take care not touch the flange section ⓑ.

2. Installation (See Fig. 3-16.)

1) Apply half a drop of oil to the axle ⓰ (See Fig. F).
2) Hook one end of the timing belt (S) ❿ onto the connecting gear assembly ⓫ and the other end onto gear ⓓ of the idler pulley assembly ❺. (Refer to the figure.)
3) Mount the connecting gear assembly ⓫ with the timing belt (S) ❿ attached to the axle ⓰.
4) Turn the stopper ❾ in the direction of the arrow 🅒 as far as it will go.
5) Apply half a drop of oil to the axle ⓬ (See Fig. A).
6) Fit the loading lever assembly ❽ to the axle ⓬, secure the ⓐ part with the claw ❼ and place the pin ⓭ into the groove of the drive gear (right) assembly ⓮.
7) Install the stopper washer ❻.
8) Place the timing belt (L) ❸ around the gears of the RC gear assembly ❷ indicated in Fig. B, and its opposite side around the gear ⓒ of the idler pulley assembly ❺. (See Fig. E.)
9) Mount the RC gear assembly ❷ onto the axle ❹ with the timing belt (L) ❸ attached, and engage it with the gear of the RK gear assembly ⓯.
10) Install the stopper washer ❶.
11) Grease parts of the loading lever assembly ❽ indicated in Fig. C.
12) Mount the pinch roller sub arm assembly as described in section 3-14.
13) Mount the DC motor (capstan motor) as described in section 3-3.

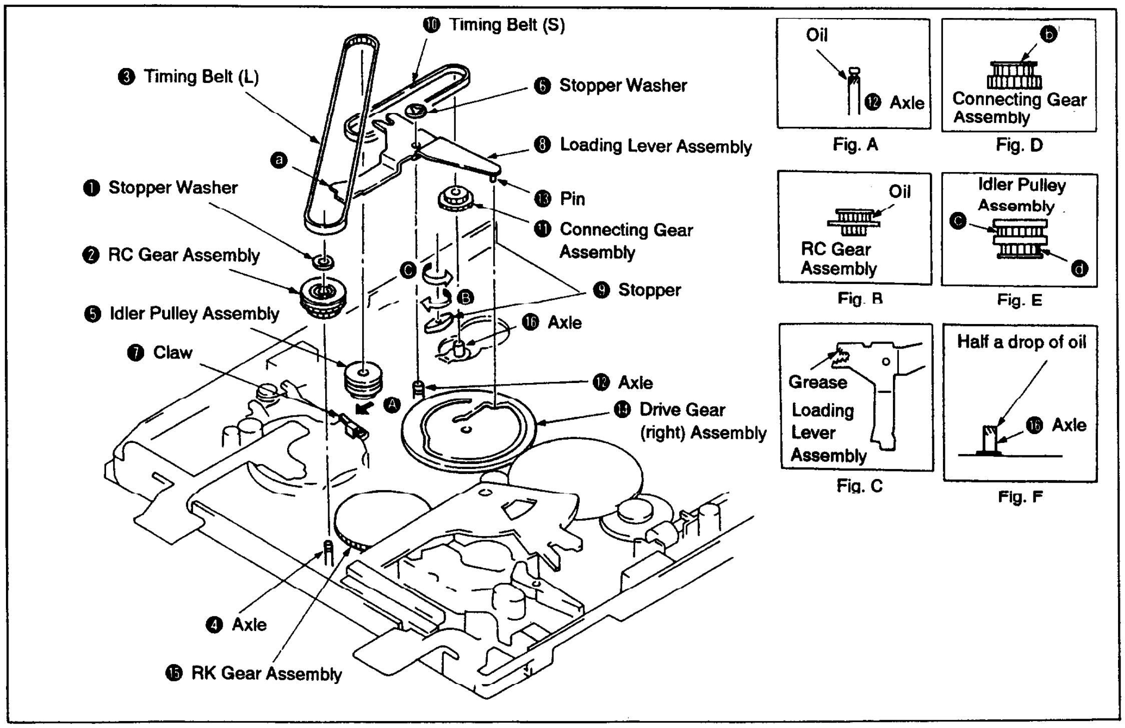

❿ Timing Belt (S)
❸ Timing Belt (L)
❻ Stopper Washer
❽ Loading Lever Assembly
ⓐ
❶ Stopper Washer
⓭ Pin
⓫ Connecting Gear Assembly
❷ RC Gear Assembly
🅒
🅑
❾ Stopper
❺ Idler Pulley Assembly
⓰ Axle
❼ Claw
⓬ Axle
🅐
⓮ Drive Gear (right) Assembly
❹ Axle
⓯ RK Gear Assembly
Oil
⓬ Axle
Fig. A
ⓑ
Connecting Gear Assembly
Fig. D
Oil
RC Gear Assembly
Fig. B
Idler Pulley Assembly
ⓒ
ⓓ
Fig. E
Grease
Loading Lever Assembly
Fig. C
Half a drop of oil
⓰ Axle
Fig. F

Fig. 3-16.

3-16. IDLER PULLEY, TS BRAKE ASSEMBLY, LB GEAR ASSEMBLY, RK GEAR ASSEMBLY

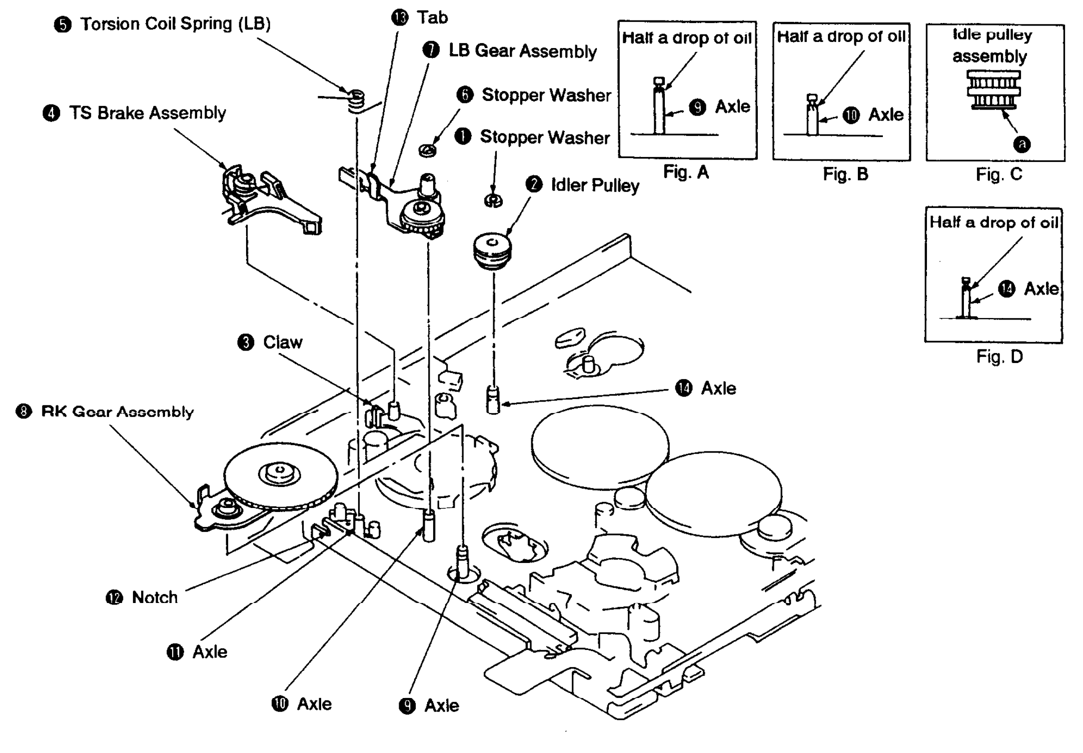
1. Removal (See Fig. 3-17.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the switch lever assembly as described in section 3-14.
3) Remove the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly described in section 3-15.
4) Set the STOP mode.
5) Remove the stopper washer ❶, then remove the idler pulley ❷.
6) Open the claw ❸, then remove the TS brake assembly ❹.
7) Remove the torsion coil spring (LB) ❺.
8) Remove the stopper washer ❻, then remove the LB gear assembly ❼.
9) Remove the RK gear assembly ❽.

Note: When removing the idler pulley ❷, take care not to touch the flange section ⓐ. (See Fig. C.)

2. Installation (See Fig. 3-17.)

1) Apply half a drop of oil to the axle ❾ (See Fig. A).
2) Mount the RK gear assembly ❽ onto the axle ❾, keeping it in horizontal position.
3) Apply half a drop of oil to the axle ❿ (See Fig. B).
4) Mount the LB gear assembly ❼ onto the axle ❿ and secure it with the stopper washer ❻.
5) Insert the torsion coil spring (LB) ❺ into the axle ⓫, then hook it to the mechanism chassis notch ⓬ and to the tab ⓭.
6) Mount the TS brake assembly ❹ and close the claw ❸.
7) Apply half a drop of oil to the axle ⓰ (See Fig. D).
8) Mount the idler pulley ❷ onto the axle ⓰, then secure it with the stopper washer ❶.
9) Mount the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly as described in section 3-15.
10) Mount the switch lever assembly as described in section 3-14.
11) Mount the DC motor (capstan motor) as described in section 3-3.



❺ Torsion Coil Spring (LB)
⓭ Tab
❼ LB Gear Assembly
❹ TS Brake Assembly
❻ Stopper Washer
❶ Stopper Washer
❷ Idler Pulley
❸ Claw
❽ RK Gear Assembly
⓮ Axle
⓬ Notch
⓫ Axle
❿ Axle
❾ Axle
Half a drop of oil
❾ Axle
Fig. A
Half a drop of oil
❿ Axle
Fig. B
Idle pulley assembly
ⓐ
Fig. C
Half a drop of oil
⓮ Axle
Fig. D

Fig. 3-17.

3-17. UL GEAR, UL BRAKE, UL ARM, LB PLATE SPRING

1. Removal (See Fig. 3-18.)

1) Remove the switch lever assembly as described in section 3-14.
2) Remove the stopper washer ❶, then remove the UL gear ❷.
3) Remove the UL arm ❸, the 1.6 mm-diameter poly washer ❹ and the LB plate spring ❺.
4) Remove the UL brake ❻.

2. Installation (See Fig. 3-18.)

1) Mount the UL brake ❻.
2) Apply half a drop of oil to the axle ❼ (See Fig. A).
3) Mount the LB plate spring ❺ to the axle ❼ as shown in Fig. B, then install the 1.6mm-diameter poly washer ❹.
4) Mount the UL arm ❸ to the axle ❼ so that the protrusion ❽ comes into the groove ❾ of the UL brake ❻.
5) Mount the UL gear ❷ to the axle ❼ and engage it with the gear of the drive gear (left) assembly ❿.
6) Install the stopper washer ❶.
7) Mount the switch lever assembly as described in section 3-14.

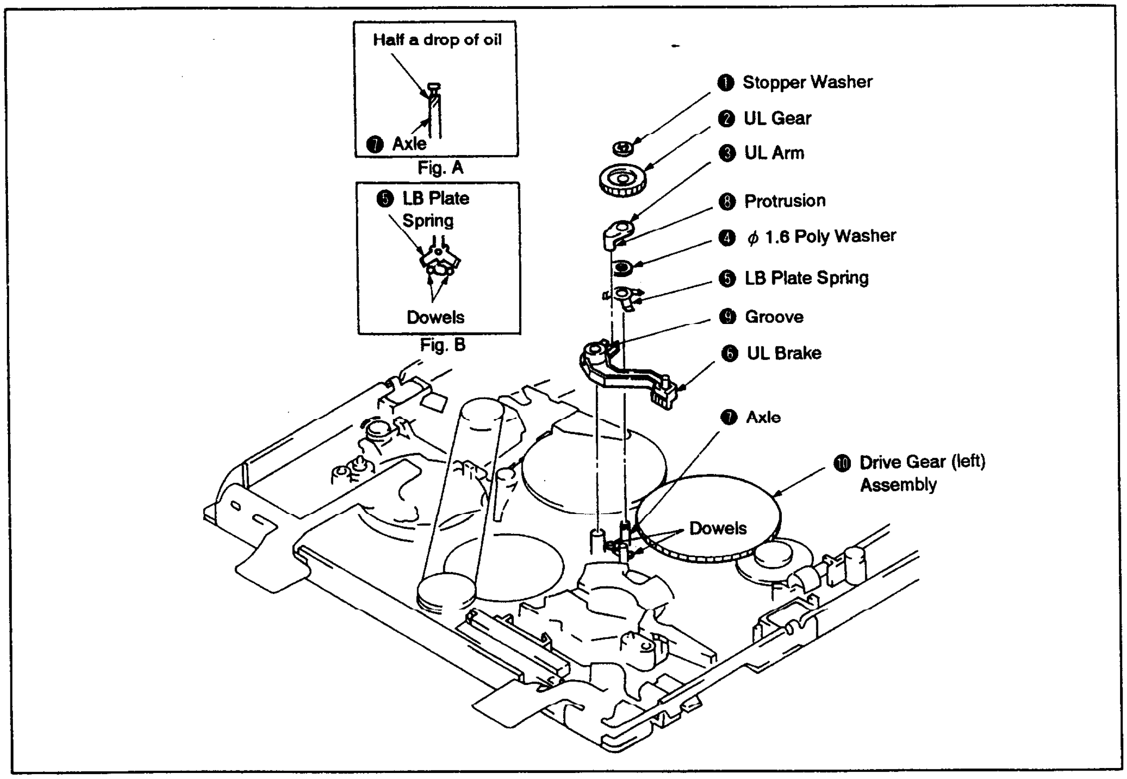

Half a drop of oil
❼ Axle
Fig. A
❺ LB Plate Spring
Dowels
Fig. B
❶ Stopper Washer
❷ UL Gear
❸ UL Arm
❽ Protrusion
❹ ϕ 1.6 Poly Washer
❺ LB Plate Spring
❾ Groove
❻ UL Brake
❼ Axle
❿ Drive Gear (left) Assembly
Dowels

Fig. 3-18.

3-18. COASTER (RIGHT) ASSEMBLY, DRIVE GEAR (RIGHT) ASSEMBLY

1. Removal (See Fig. 3-19.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the drum unit as described in section 3-13.
3) Remove the switch lever assembly as described in section 3-14.
4) Remove the timing belt (L) , the RC gear assembly and the loading lever assembly as described in section 3-15.
5) Set the STOP mode.
6) Remove the screw ❶ , then remove the coaster plate spring ❷ and the coaster (right) assembly ❸ .
7) Remove the two screws ❹ , then remove the reinforcing plate TT ❺ .
8) Remove the stopper washer 1.5 ❻ , then remove the drive gear (right) assembly ❼ .

2. Installation (See Fig. 3-19.)

1) Grease the points of the mechanism chassis shown in Fig A.
2) Apply half a drop of oil to the axle ❽ (See Fig. F).
3) Grease pin ❾ , axle ❿ and dowel ⓮ of the coaster (right) assembly ❸ (See Fig. D).
4) Mount by aligning the pin ❾ and the axle ❿ with the slot ⓫ of the mechanism chassis.
5) Move the brake release arm ⓬ in the direction of the arrow 🅐 to put it out of the way.
6) Mount the drive gear (right) assembly ❼ to the axle ❽ , and engage it with the drive gear (left) assembly ⓭ as shown in Fig. B.
7) Align the ⓐ part with the ⓑ part, and the hole ⓮ with the pin ❾ of the coaster (right) assembly ❸ .
8) Install the stopper washer 1.5 ❻ .
9) Mount by aligning the coaster plate spring ❷ with the axle ❿ of the coaster (right) assembly ❸ and pin ❾ , then secure with the screw ❶ .
10) Mount the reinforcing plate TT ❺ aligning it with the dowel ⓯, then tighten the two screws ❹ in the indicated order.
11) Grease the points indicated in Figs. C and E.
12) Mount the timing belt (L) , the RC gear assembly and the loading lever assembly as described in section 3-15.
13) Mount the switch lever assembly as described in section 3-14.
14) Mount the drum unit as described in section 3-13.
15) Mount the DC motor (capstan motor) as described in section 3-3.

Note:
- Screw ❶ should be tightened with a tightening torque of approx. 500g•cm. If tightened too much, the coaster (right) assembly ❸ and the coaster plate spring ❷ will be deformed.
- After installing, be sure to perform tape path adjustment as described in section 4.

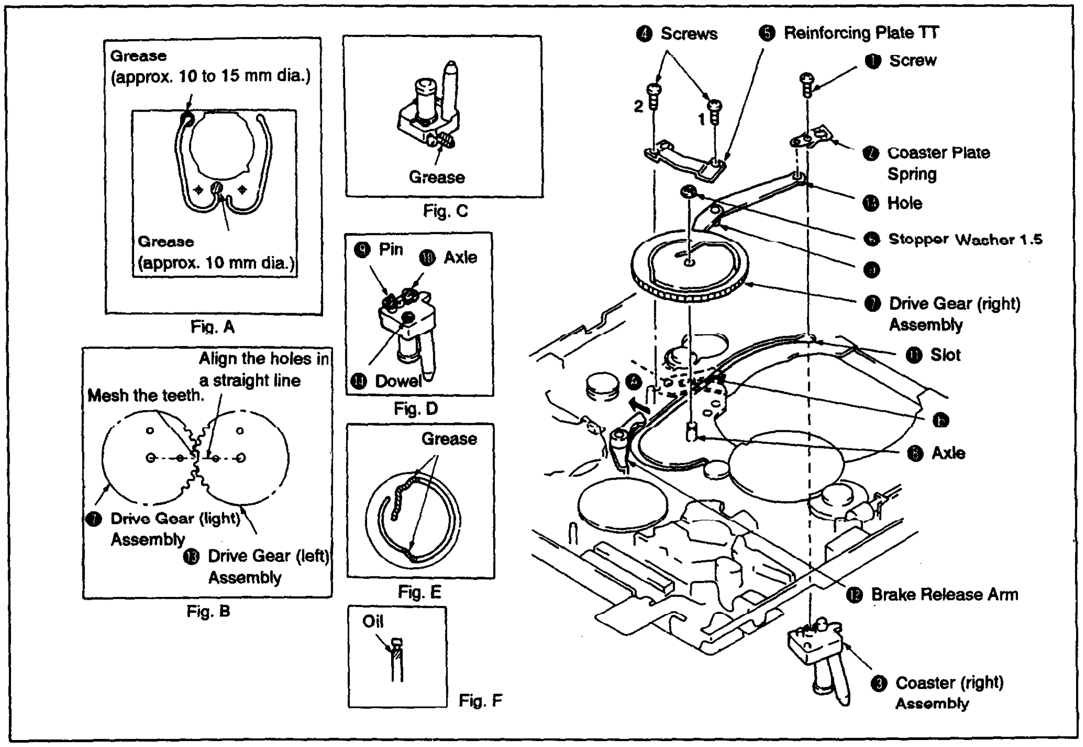

Grease
(approx. 10 to 15 mm dia.)
Grease
(approx. 10 mm dia.)
Fig. A
Align the holes in a straight line
Mesh the teeth.
❼ Drive Gear (right) Assembly
⓭ Drive Gear (left) Assembly
Fig. B
Grease
Fig. C
❾ Pin
❿ Axle
⓮ Dowel
Fig. D
Grease
Fig. E
Oil
Fig. F
❹ Screws
❺ Reinforcing Plate TT
❶ Screw
2
1
❷ Coaster Plate Spring
⓯ Hole
❻ Stopper Washer 1.5
ⓐ
❼ Drive Gear (right) Assembly
⓫ Slot
🅐
ⓑ
❽ Axle
⓬ Brake Release Arm
❸ Coaster (right) Assembly

Fig. 3-19.

3-19. COASTER (LEFT) ASSEMBLY, DRIVE GEAR (LEFT) ASSEMBLY

1. Removal (See Fig. 3-20.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the drum assembly as described in section 3-13.
3) Remove the switch lever assembly and the pinch roller sub-arm assembly as described in section 3-14.
4) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
5) Remove the coaster (right) assembly and the drive gear (right)assembly as described in section 3-18.
6) Remove the screw ❶, then remove the coaster plate spring ❷ and the coaster (left) assembly ❸.
7) Remove the two screws ❹, then remove the reinforcing plate SS assembly ❺.
8) Remove the stopper washer 1.5 ❻, then remove the drive gear (left) assembly ❼.

2. Installation (See Fig. 3-20.)

1) Grease the points of the mechanism chassis shown in Fig A.
2) Apply half a drop of oil to the axle ❽ (See Fig. E).
3) Grease pin ❾, axle ❿ and dowel ⓰ of the coaster (left) assembly ❸ (See Fig. B).
4) Mount by aligning the pin ❾ and the axle ❿ with the slot ⓫ of the mechanism chassis.
5) Fit the drive gear (left) assembly ❼ to the axle ❽, and mount so that the gear engages with the wheel gear ⓭ and the UL gear ⓮.
6) Align the ⓐ part with the slot ⓫, and the hole ⓮ with the pin ❾ of the coaster (left) assembly ❸.
7) Install the stopper washer 1.5 ❻.
8) Mount by aligning the coaster plate spring ❷ with the axle ❿ and pin ❾ of the coaster (left) assembly ❸, then secure with the screw ❶.
9) Mount the reinforcing plate SS assembly ❺ aligning it with the dowel ⓯, then tighten the two screws ❹ in the indicated order.
10) Grease points indicated in Figs. C and D.
11) Mount the coaster (right) assembly and the drive gear (right)assembly as described in section 3-18.
12) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
13) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
14) Mount the drum assembly as described in section 3-13.
15) Mount the DC motor (capstan motor) as described in section 3-3.

Note:
- Screw ❶ should be tightened with a tightening torque of approx. 500g•cm. If tightened too much, the coaster (right) assembly ❸ and the coaster plate spring ❷ will be deformed.
- After installing, be sure to perform tape path adjustment as described in section 4.

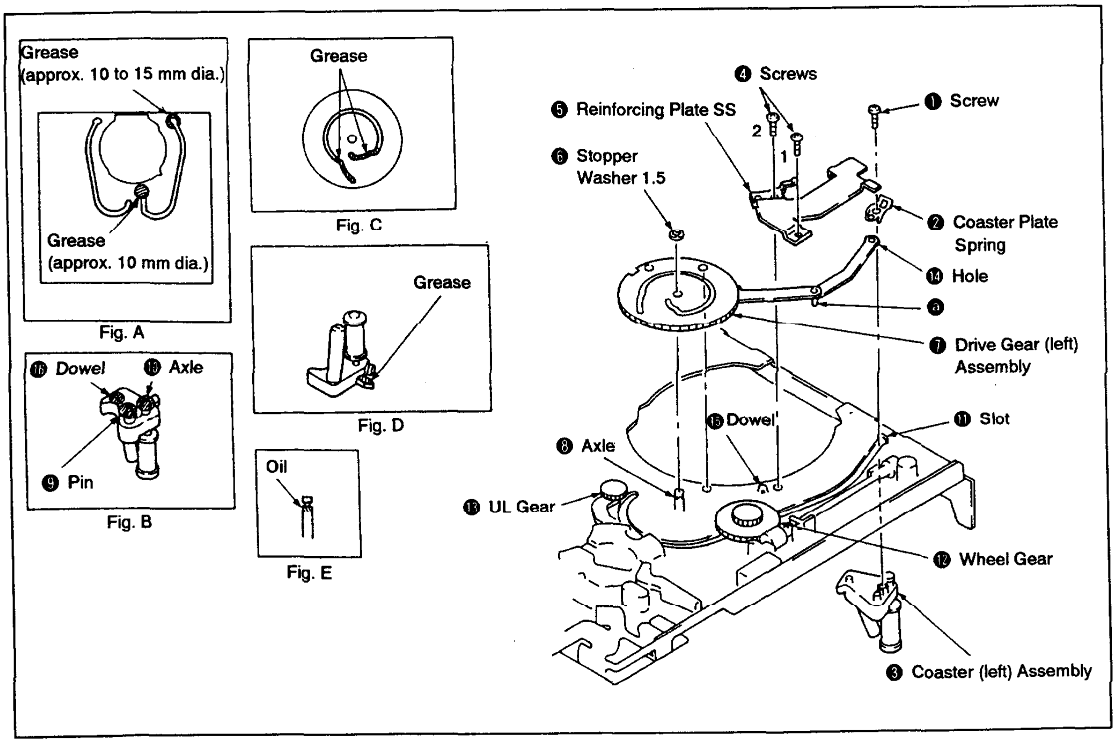

Grease
(approx. 10 to 15 mm dia.)
Grease
(approx. 10 mm dia.)
Fig. A
⓰ Dowel
❿ Axle
❾ Pin
Fig. B
Grease
Fig. C
Grease
Fig. D
Oil
Fig. E
❹ Screws
❺ Reinforcing Plate SS
2
1
❶ Screw
❻ Stopper Washer 1.5
❷ Coaster Plate Spring
⓮ Hole
ⓐ
❼ Drive Gear (left) Assembly
⓯ Dowel
❽ Axle
⓫ Slot
⓭ UL Gear
⓬ Wheel Gear
❸ Coaster (left) Assembly

Fig. 3-20.

3-20. LOADING MOTOR, BRAKE RELEASE ARM, WHEEL GEAR, WORM ASSEMBLY

1. Removal (See Fig. 3-21.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
3) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
4) Remove the drive gear (right) assembly as described in section 3-18.
5) Remove the drive gear (left) assembly as described in section 3-19.
6) Remove the two screws ❶, then remove the loading motor assembly ❷.
7) Remove the brake release arm ❸.
8) Remove the stopper washer ❹, then remove the wheel gear ❺.
9) Remove the worm assembly ❻ from the six claws ❼.

2. Installation (See Fig. 3-21.)

1) Mount the worm assembly ❻, matching it to the six claws ❼.
2) Grease the shaded parts of the worm assembly ❻ (five places) (see Fig A).
3) Apply half a drop of oil to the axle ❽ (See Fig. B).
4) Fit the wheel gear ❺ to the axle ❽ and engage it with the gear of the worm assembly ❻.
5) Mount the brake release arm ❸.
6) Grease the whole perimeter of the gear of the loading motor assembly ❷.
7) Align the loading motor assembly ❷ with the mechanism chassis and secure it with the two screws ❷.
8) Mount the drive gear (left) assembly as described in section 3-19.
9) Mount the drive gear (right) assembly as described in section 3-18.
10) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
11) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
12) Mount the DC motor (capstan motor) as described in section 3-3.

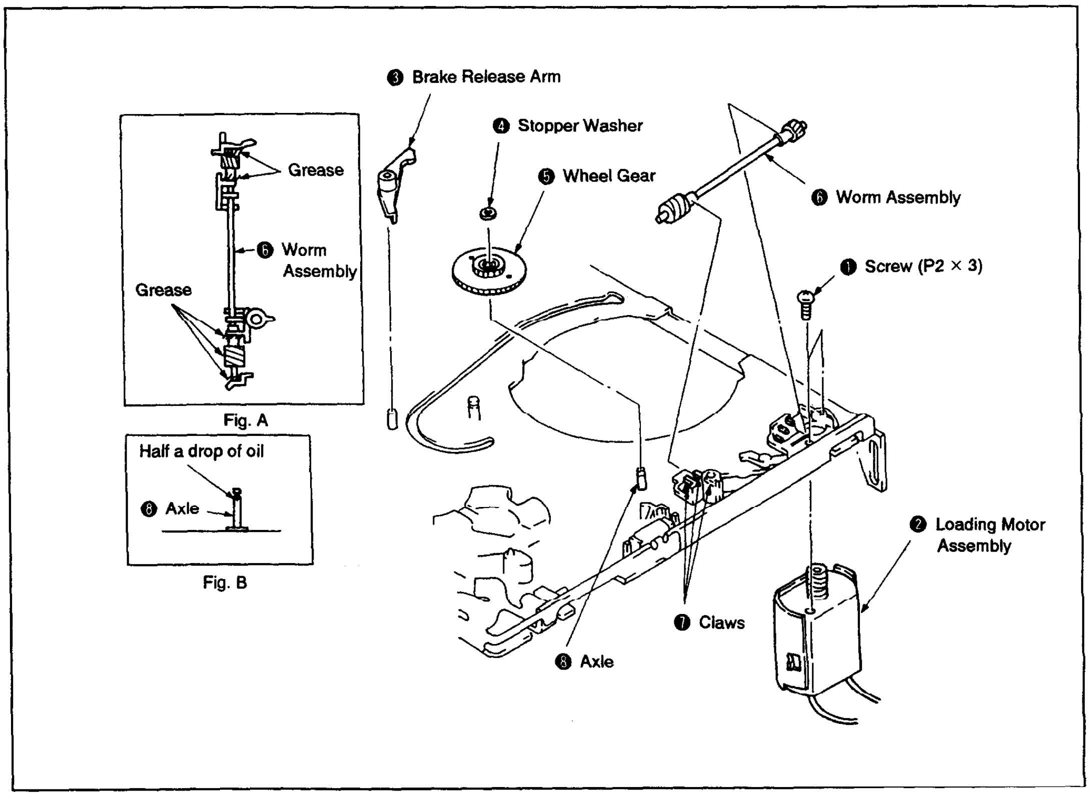


Fig. A

Fig. B

Fig. 3-21.

3-21. ROTARY UPPER DRUM REPLACEMENT

1. Removal

- If possible, make a recording before removal.

1) Detach the six solderings ❾, then use a pair of tweezers or the like to confirm that the terminals passing through the board holes from below can move freely.
2) Remove the two screws ❶ (See Fig. 3-22).
3) Mount the jig ❹ (Ref. No. J-7) with the two supplied screws ❷, then screw the attached hexagon socket screws ❸ to the jig ❹. The rotary upper drum ❺ will move upward and come off (See Fig. 3-23).

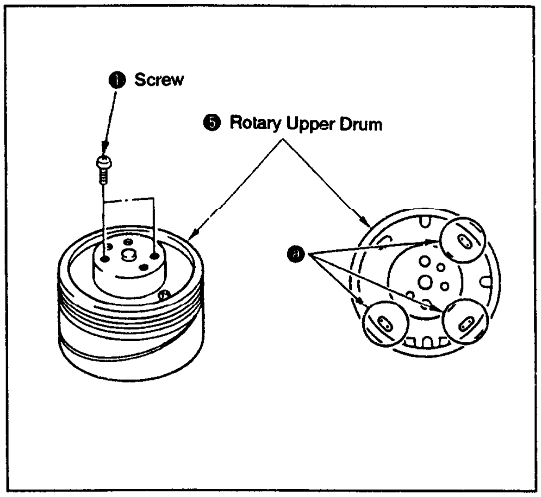


Fig. 3-22.

2. Installation

1) Wipe clean the flange surface and the rotary upper drum ❺ surface that makes contact with it, and confirm that they are free from dirt and scratches.
2) Insert the jig ❼ (Ref. No. J-7) into the drum positioning hole, then set the rotary upper drum ❺ by passing the jig through its positioning hole ❻.

   Note: Confirm that the terminals ❽ protrude slightly from the rotary upper drum board holes (See Fig. 3-24).
3) Remove the jig ❼ and push down the rotary upper drum ❺ gently by hand. If it does not go all the way down, secure it temporarily by tightening the two hexagon socket screws ❶ alternately.
4) Insert the jig ❼ into the positioning hole ❻ again and confirm that it goes in smoothly. If it does not, loosen the two screws ❶, repeat step 3 of the Removal paragraph and restart the setting procedure.
5) Tighten the screws ❶.
6) Solder the terminals ❽ (❾ in Fig. 3-22).

   Note: Take care that no solder flows below the board.

Note: After installing, be sure to perform tape path adjustment as described in section 4.

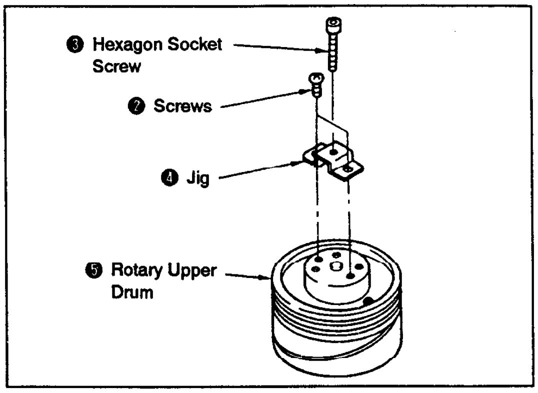


Fig. 3-23.

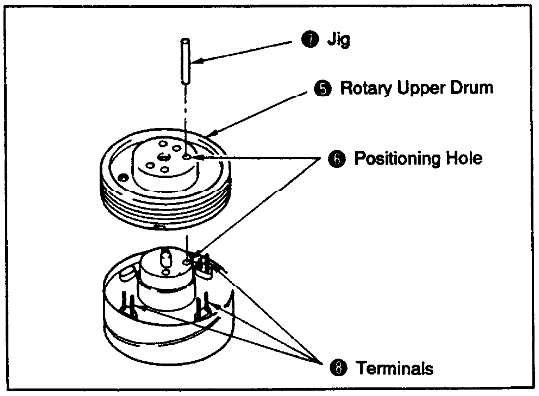


Fig. 3-24.

3-22. FWD BACK TENSION (See Fig. 3-25.)

1) Set the torque cassette (Ref. No. J-6).
2) Set the FWD mode and confirm that S reel table torque value is within 9 to 13 g•cm.
3) If the torque value does not meet the specification, adjust the adjust arm ❶.

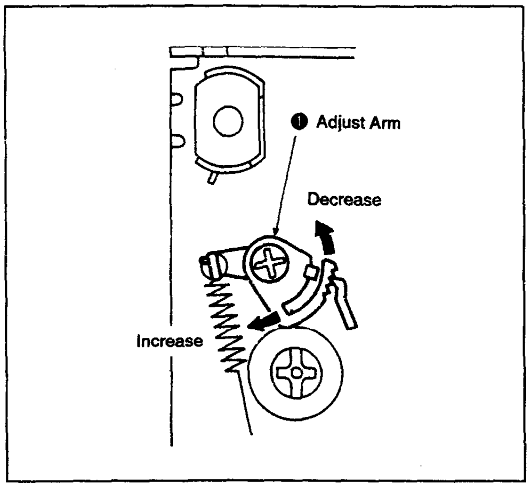


Fig. 3-25.

3-23. REEL TORQUE CHECK

1) Set the torque cassette.
2) Set the FWD mode and confirm that T reel table torque value is within 7 to 15 g•cm.
3) Set the REV mode and confirm that S reel table torque value is within 29 ± 6 g•cm.
4) Set the REV mode and confirm that T reel table torque value is within 13 to 25 g•cm.
5) If a torque value does not meet the specifications above, replace the corresponding reel table.

4. TAPE PATH ADJUSTMENT

[The Track Shift Mode]

In the 8 mm video system, instantaneous tape speed control is performed using four kinds of pilot signals, and high-precision tracking is achieved through the ATF (Automatic Track Finding) system. This makes a tracking control knob unnecessary and allows for precise tracing.

On the other hand, however, tape path adjustment presents some difficulties when the ATF system is used. Namely, since the ATF system will automatically compensate to some degree for head tracing errors, thorough adjustment is not possible.

This can be solved by setting the track shift mode for tracking fine adjustment. ATF will be compulsorily activated, shifting the tracking amount by a fixed amount (approx. 1/4) and thus making tracking fine adjustment easy. Furthermore, no track shift jigs are required.

4-1. TRACK SHIFT MODE SETTING

[Setting Procedure]

- Connect the TEST A and TEST B terminals to the COM terminal.
  Example:
  NTSC ········ GV-8
  PAL ·········· GV-8E
  Connect Pins ① and pin ③ of CN017 on the {SV-34 board (GV-8) / SV-35 board (GV-8E)} to pin ② of it. (See Fig. 4-1)

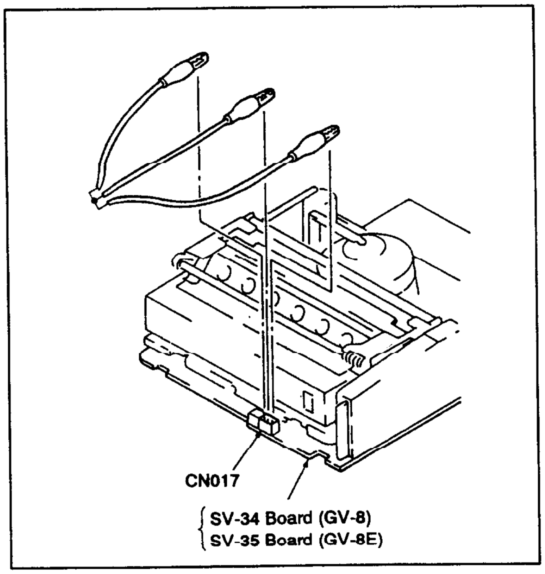
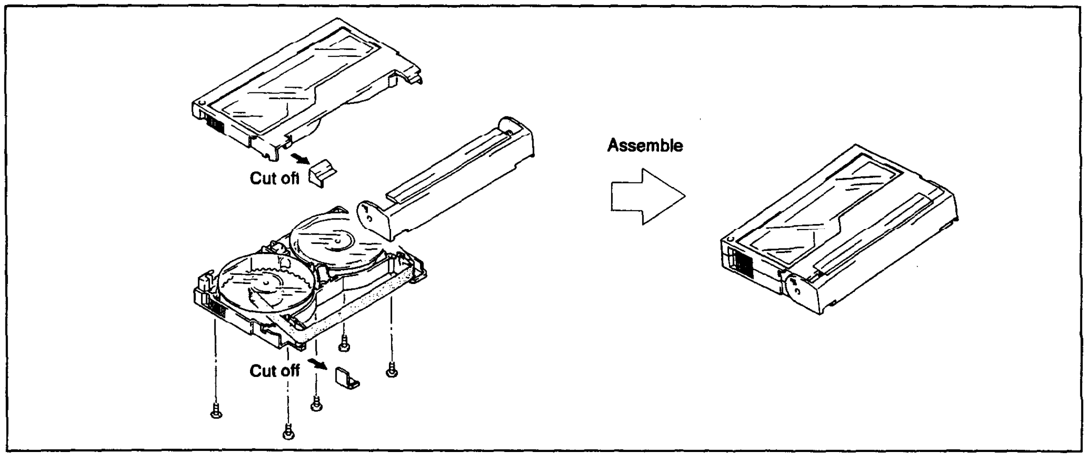


Fig. 4-1.

[Note on Adjustment of No.7 Guide (TG-7)]

The height adjustment screw for No.7 guide (TG-7) is located at some distance from the guide (refer to Fig. 4-2).
Therefore, when performing section 4-6. No.7 Guide (TG-7) Adjustment it is convenient to use the alignment tape for tracking (Ref. No. J-5), modified as follows, and perform adjustment in playback mode.


Cut off
Cut off
Assemble

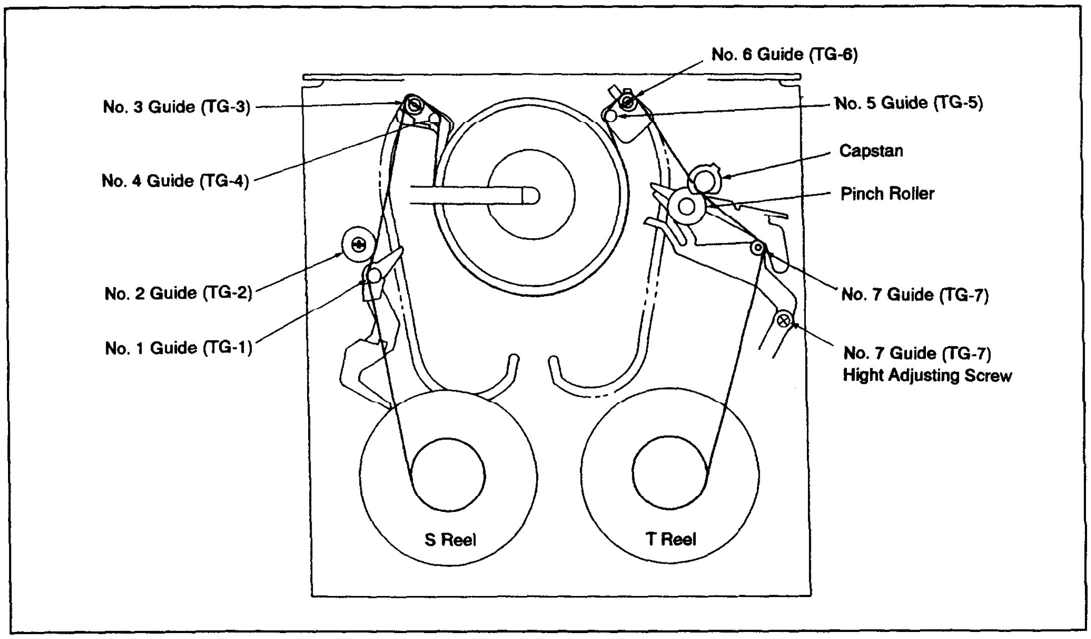
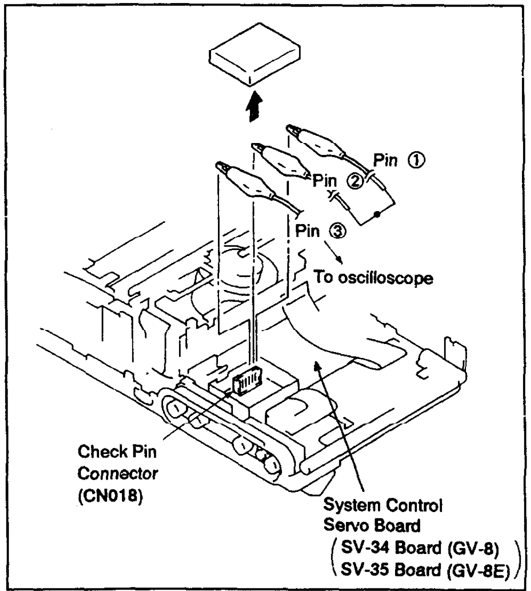

No. 6 Guide (TG-6)
No. 3 Guide (TG-3)
No. 5 Guide (TG-5)
Capstan
No. 4 Guide (TG-4)
Pinch Roller
No. 2 Guide (TG-2)
No. 7 Guide (TG-7)
No. 1 Guide (TG-1)
No. 7 Guide (TG-7)
Hight Adjusting Screw
S Reel
T Reel

Fig. 4-2.

4-2. PREPARATIONS FOR ADJUSTMENT

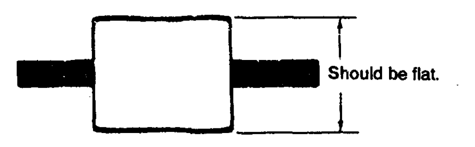
1) Clean tape path surfaces (tape guides, drum, capstan shaft, pinch roller) (See Fig. 4-2).
2) Connection of oscilloscope and output method of waveform.
   CH 1: RF signal output of the drum head (V RF OUT)
   Method for signal output:
   Short-circuit the external trigger output (RF SW. P) and GND.

   Example:
   NTSC ····· GV-8
   PAL ······· GV-8E
   CH 1: Pin ③ (V RF OUT) of CN018 on the
   { SV-34 board (GV-8)
   { SV-35 board (GV-8E)
   Method for signal output:
   Short-circuit pin ① (GND) and pin ② (RF SW.P) of CN018 on the
   { SV-34 board (GV-8)
   { SV-35 board (GV-8E)
3) Play back the alignment tape for tracking adjustment (Ref. No. J-5).
4) Confirm that both the entrance and exit side RF waveforms of the oscilloscope are flat (See Fig. 4-4). If they are not, adjust as follows.



Pin ①
Pin ②
Pin ③
To oscilloscope
Check Pin Connector (CN018)
System Control Servo Board
(SV-34 Board (GV-8))
(SV-35 Board (GV-8E))

Fig. 4-3.



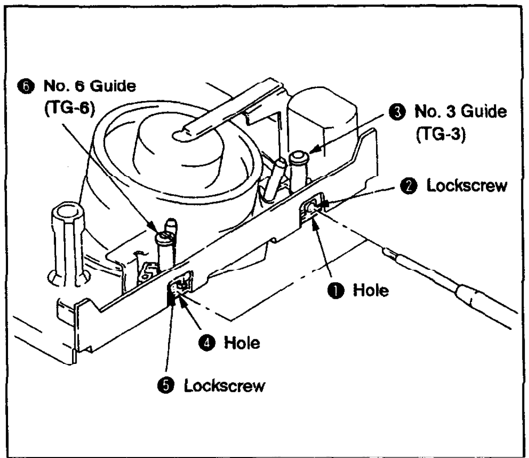
Should be flat.

Fig. 4-4.

4-3. TRACKING ADJUSTMENT (See Fig. 4-5.)

1) Play back the alignment tape for tracking adjustment.
2) Pass a hexagonal wrench, screwdriver (Ref. No. J-11) or the like through the hole ❶, loosen the lockscrew ❷ a little, then make the entrance side waveform flat by turning the No. 3 guide (TG-3) ❸.
3) Pass a hexagonal wrench, screwdriver or the like through the hole ❹, loosen the lockscrew ❺ a little, then make the exit side waveform flat by turning the No. 6 guide (TG-6) ❻.

Note: Take care not to loosen lockscrews too much, since guides come loose easily.



❻ No. 6 Guide (TG-6)
❸ No. 3 Guide (TG-3)
❷ Lockscrew
❶ Hole
❹ Hole
❺ Lockscrew

Fig. 4-5.

4-4. TRACKING FINE ADJUSTMENT (See Figs. 4-5. and 4-6.)

1) Play back the alignment tape for tracking adjustment and set the track shift mode.
2) Confirm whether the waveform is flat. If it is not, turn the No. 3 (TG-3) and No. 6 (TG-6) guides so that it becomes flat.
3) Fix the No. 3 guide ❸ by tightening its lockscrew ❷. Then confirm that the entrance side waveform has not changed.
4) Fix the No. 6 guide ❻ by tightening its lockscrew ❺. Then confirm that the exit side waveform has not changed.

Note: The set screws ❷ and ❺ should be tightened with a tightening torgue of approx. 200g•cm ± 10%.
If tightened too much, there is danger of damaging the thread.

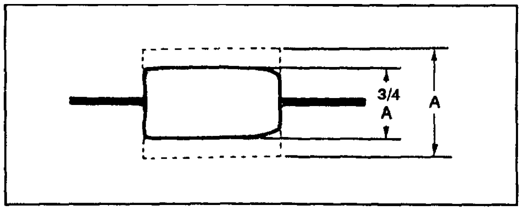


Fig. 4-6.

4-5. No. 2 GUIDE (TG-2) ADJUSTMENT

When the No. 2 guide has been turned or replaced, perform height presetting before this adjustment.

4-5-1. No. 2 Guide (TG-2) Height Presetting (See Fig. 4-7.)

1) Adjust the height from the mechanism chassis upper surface to the TG-2 upper flange ❶ upper surface to 18.6 mm by rotating the TG-2 upper flange ❶.

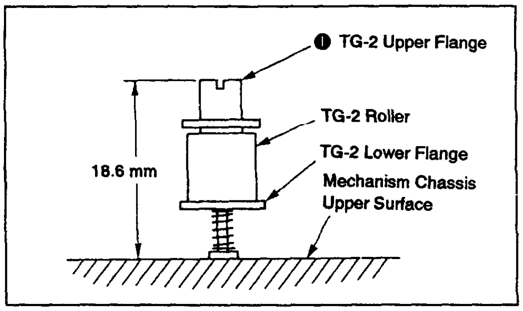


Fig. 4-7.

[Reference]

This U mechanism is equipped with four adjustable guides (TG-2, 3, 6 and 7). To raise or lower the respective guide rotate the corresponding adjustment screw as shown below.

Guide	Guide adjustment	Rotating direction of adjustment screw
TG-2, 3, 6	Raise	Counterclockwise
	Lower	Clockwise
TG-7	Raise	Counterclockwise
	Lower	Clockwise

4-5-2. No. 2 Guide (TG-2) Adjustment
(See Figs. 4-8. and 4-9.)

1) Play back a thin tape like the P6-120MP, etc. and set the REV mode.
2) Confirm that the tape is not bent at the lower flange ❷ of the No. 2 guide (TG-2) ❶ (See Fig. 4-8). If it is, turn the upper flange ❸ of the No. 2 guide (TG-2) ❶ clockwise with a screwdriver, lowering it until the tape is straightened.
3) Play back the alignment tape for tracking adjustment.
4) Perform tracking adjustment and tracking fine adjustment as described in sections 4-3. and 4-4.
5) In the track shift mode, CUE/REV the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds.
6) If the waveform is not normal (See Fig. 4-9), turn the upper flange ❸ of the No. 2 guide (TG-2) ❶ 90° counter-clockwise and repeat step 5.
   Repeat steps 5 and 6 until a normal waveform is obtained. Then, confirm that the tracking waveform has not changed. If it has, perform fine adjustment of entrance side tracking and repeat step 5.

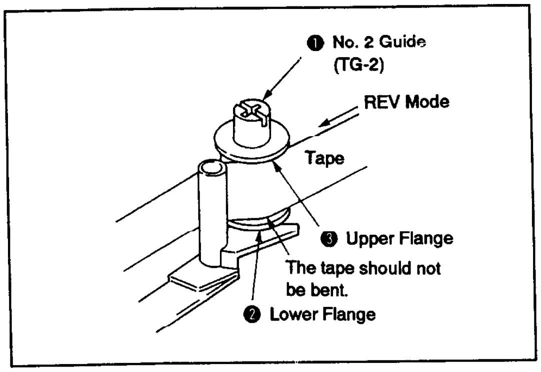

❶ No. 2 Guide
(TG-2)
REV Mode
Tape
❸ Upper Flange
The tape should not be bent.
❷ Lower Flange

Fig. 4-8.

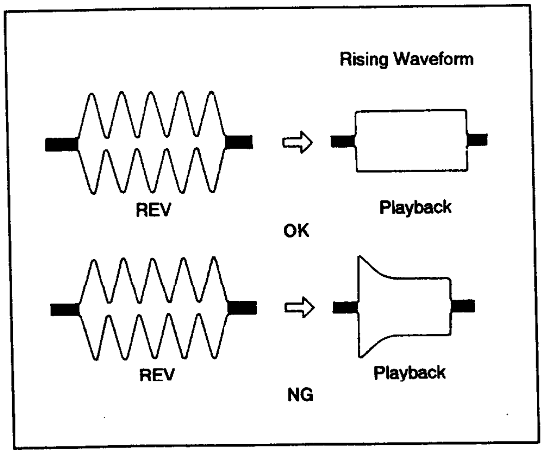

Rising Waveform
REV
OK
Playback
REV
NG
Playback

Fig. 4-9.

4-6. No. 7 GUIDE (TG-7) ADJUSTMENT
(See Fig. 4-10.)

1) Play back the alignment tape for tracking adjustment and set the REV mode.
2) Confirm that the tape is not bent between the No. 6 guide (TG-6) ❶ and the capstan ❷. If it is, turn the hight adjusting screw ❹ of the No. 7 guide (TG-7) ❸ until the tape is straightened.
3) Set the playback mode again and confirm that the tape is not bent between the capstan ❷ and the hight adjusting screw ❹ of the No. 7 guide (specification:0.5 mm or less). If the tape is bent beyond the specification, turn the No. 7 guide (TG-7) ❸ until bending is within the specification (0.5 mm).
   If in the REV mode tape bending between the No. 6 guide (TG-6) ❶ and the capstan ❷ is 0.3 mm or less, adjustment can be considered completed.

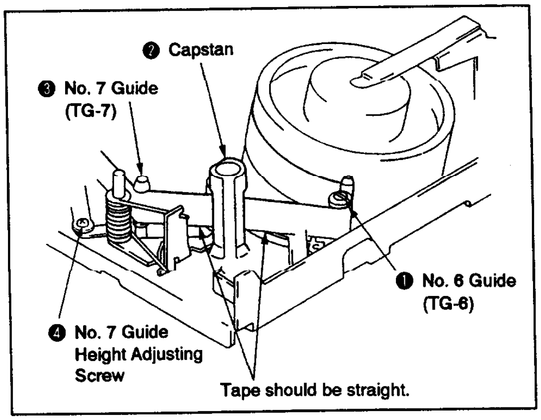

❷ Capstan
❸ No. 7 Guide
(TG-7)
❶ No. 6 Guide
(TG-6)
❹ No. 7 Guide
Height Adjusting
Screw
Tape should be straight.

Fig. 4-10.

4-7. CUE AND REV WAVEFORM CHECK (See Fig. 4-11.)

1) Play back the alignment tape for tracking adjustment and set the REV mode. Confirm that waveform peaks maintain a constant pitch of 5 seconds or more (See Fig. 4-11). In case pitch is not constant, perform section 4-4. Tracking Fine Adjustment and section 4-6. No. 7 Guide Adjustment.
2) Set the CUE mode. Confirm that waveform peaks still maintain a constant pitch of 5 seconds or more (See Fig. 4-11). Otherwise, perform section 4-4. Tracking Fine Adjustment.

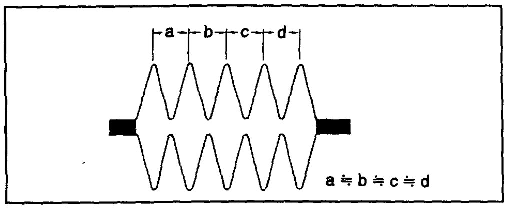


Fig. 4-11.

4-8. CHECK AFTER ADJUSTMENT

4-8-1. Tracking Check

1) Confirm that the amplitude of RF waveform is reduced to approx. 3/4 when the track shift mode is set (See Fig. 4-12).
2) Then, confirm that the minimum amplitude value (EMIN) is 65% of the maximum value (EMAX) or larger (See Fig. 4-13).
3) Confirm that no large fluctuations occur on the waveform (See Fig. 4-14).

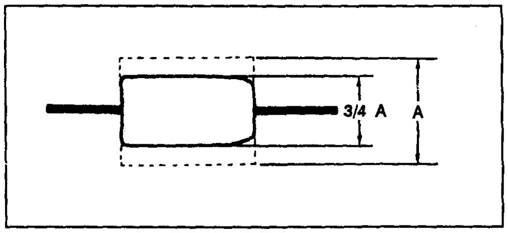


Fig. 4-12.

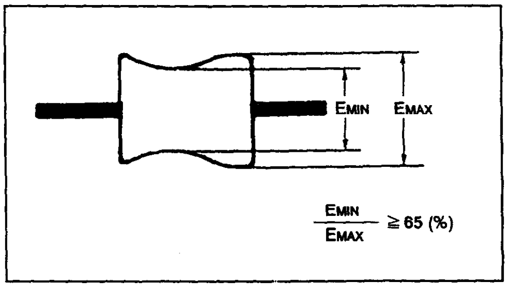


Fig. 4-13.

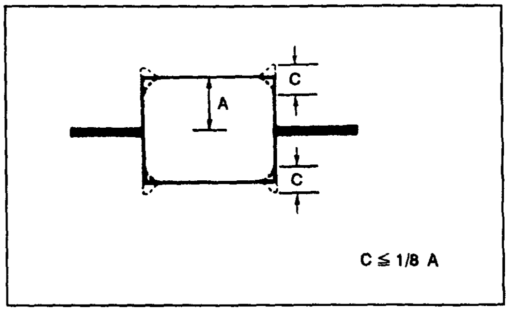


Fig. 4-14.

4-8-2. Rising Check (See Fig. 4-15.)

1) Play back the alignment tape for tracking adjustment.
2) Cancel the track shift mode.
3) Eject the tape, then load it again.
4) Set the playback mode and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller (See Fig. 4-15).
5) CUE/REV and FF/REW the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
6) Repeat steps 3) to 5) once more.

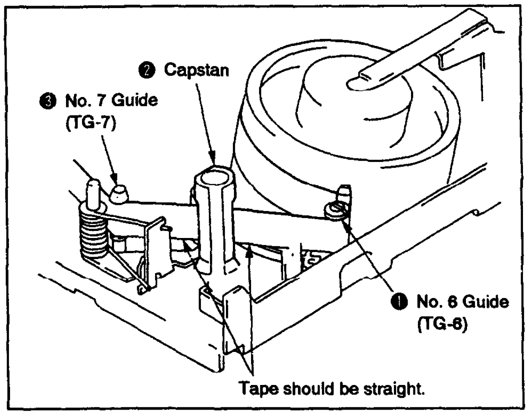

❷ Capstan
❸ No. 7 Guide
(TG-7)
❶ No. 6 Guide
(TG-6)
Tape should be straight.

Fig. 4-15.

4-8-3. Tape Path Check (See Fig. 4-16.)

1) Play back a thin tape like the P6-120MP (NTSC) or P5-90MP (PAL), etc. and confirm that no tape rising occurs, and that curling is less than 0.3 mm, at the lower flange of the No. 2 guide, the upper flange of the No. 3 guide, the upper flange of the No. 6 guide and the No. 7 guide upper and lower flanges.
2) Confirm that no tape rising occurs and that curling is less than 0.3 mm at the flanges of all guide when pressing the FF button in the playback mode to set the CUE mode, or the REW button to set the REV mode.

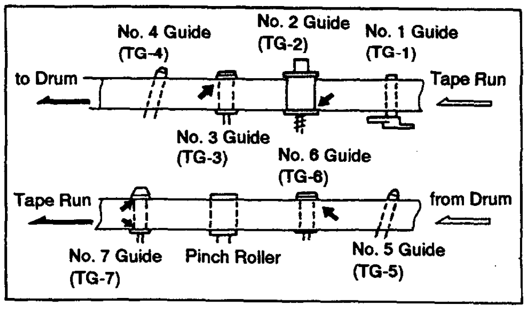

No. 4 Guide
(TG-4)
No. 2 Guide
(TG-2)
No. 1 Guide
(TG-1)
to Drum
Tape Run
No. 3 Guide
(TG-3)
No. 6 Guide
(TG-6)
Tape Run
from Drum
No. 7 Guide
(TG-7)
Pinch Roller
No. 5 Guide
(TG-5)

Fig. 4-16.